Suzahoza Steam Furnace

AMERICAN RAILROAD JOURNAL,

AND

IRON MANUFACTURER'S AND MINING GAZETTE.

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AMERICAN RAILROAD JOURNAL.

PUBLISHED AT 105 CHESTNUT ST. PHILADELPHIA.

Saturday, August 26, 1848.

TO CONTRACTORS.

SEALED proposals will be received at the office of the Lafayette and Indianapolis Railroad Co. in Lafayette, until the 11th day of October next, for the Grading, Masonry and Bridging of that part of said road lying between the summit south of Durkee's Run, near Lafayette, and Lebanon, in Boone county, about 34 miles. Also, for the wooden superstructure for the same, in a distinct bid.

Plans and specifications will be exhibited by the engineer. By order of the Board.

ALBERT S. WHITE, Pres't.

Lafayette, Aug. 17, 1848. 6t35

Hartford and Providence Road.

The entire grading, piling, masonry and bridging between the eastern bank of Connecticut river and Willimantic, 29 miles, is, we understand, put under contract to Messrs. Boody, Ross & Dillon, of Springfield. The company will soon be prepared to contract for the building of a bridge over the Connecticut.

Cumberland Road.

In the Senate, August 10th, Mr. Hannegan, chairman of the committee on roads and canals, reported from the house a bill ceding to Indiana that part of the Cumberland road lying in said state, which was read the third time and passed.

This great road will therefore hereafter be subject to State legislation. The precise terms of the cession, the Indiana Sentinal, from which we quote, is not informed, but "hopes and expects they are such as will enable the State to transfer the road to companies, who will complete it in some economical and substantial manner, the expense to be remunerated by a levy of limited tolls for a series of years. In this way, and this only, can the road soon be completed."

Iron Trade.

The Liverpool correspondent of the Commercial List, in a letter dated July 28th, says: "The English iron market is now decidedly better, and all the makers refuse to sell at the late reduction in prices. It appears that they are fearful they will not be able to made the reduction in wages lately expected; if so, prices will again advance 20s. per ton, or they will cease their make.

"Scotch pig is at present selling below the price at which it can be manufactured to pay a profit.—The quotations are 42s. 6d. and 45s. per ton on the Clyde. At Liverpool

Merchant bar commands	£6 5 0
No 1 Scotch pig	2 15 0
No 1 Gartsherrie pig	2 17 6"

Canada Roads.

A line is now completed from LaPrairie, on the St. Lawrence river, to St. Johns. A continuation is in progress through Vermont, crossing the Hudson, river between Glen's Falls and Saratoga, and from thence on the west side of the river to Albany. Another route is from St. Johns to Burlington; thence crossing Vermont, through Montpelier, into New Hampshire, and through Plymouth, connecting with the Concord road—which is a continuation of the Boston and Lowell road—at Frankfort. Another route is at Vergennes, in Vermont, crossing Vermont, through Rutland and Charleston, into New Hampshire, connecting with the Fitchburg road in Boston.

Schuylkill Coal Trade.

The Philadelphia Commercial List says that the facilities for sending supplies of coal to market from this region are on the most ample scale. Both the canal and railroad are among the best in the world—and capable of carrying almost any amount that may be required. During the week ending the 10th inst., the quantity forwarded from this region was, by railroad, 34,593 17 tons, and by canal, 16,349 02 tons—together, 50,942 19; being considerably the largest quantity ever forwarded in any previous week.

During the week ending on Thursday, 17th, the supplies have been, by canal 13,725 11 tons, and by railroad 30,044 08—total, 43,769 19.

Pennsylvania Central Railroad.

We learn from the Pittsburgh Gazette, that the subscription of 20,000 shares to the stock of this company, has been finally consummated by the commissioners of Allegheny county. In making the subscription, it is stipulated that "this subscription, together with the additional sum of one million of dollars, shall be expended in the construction of the road from Pittsburgh eastwardly to the Allegheny mountains." Other conditions, which were also accepted, require that the terminus of the road shall be within the city of Pittsburgh; and that the railroad company shall pay six per cent. interest on this subscription until the road is finished.

Canal Tolls.

The amount received for tolls on all the New York State canals during the second week in Aug., was.....$70,805 00
Same period in 1847.....91,081 65

Decrease.....20,276 65

The aggregate amount received for tolls from the commencement of navigation to 14th of August, inclusive, was.....$1,452,013 72
Same period in 1847.....1,978,886 35

Decrease.....526,872 63

Massachusetts Enterprise.

We copy from the Boston Courier the following interesting statistics:

"Fifty years since, the Middlesex canal, costing but half a million, was considered a vast undertaking, and required twenty years for its completion—but since June, 1846, we have commenced and nearly built up from a desert the new city of Lawrence, constructed new streets and factories at Manchester, Lowell, Biddeford, Blackstone, Lancaster, Worcester, Springfield and Fitchburg; the foundations of a new factory city at West Springfield; made a great aqueduct for Boston; contributed at least seven millions to the war loan; purchased a large part of the Central Michigan, and Wilmington, Mad River, Housatonic, Reading and other railroads out of the state; enlarged and improved all the great routes out of Boston; constructed new lines to Wareham and the Cape, Bridgewater, Milton, Fall River, Blackstone, Milford, Greenfield, Athol, Lawrence, Gloucester, Woburn and Medford, and many cross lines in our own state; and greatly advanced, or, finished the Northern Passumpsic, Vermont Central, Montreal, Vermont and Massachusetts, Cheshire, Rutlan'p

Sullivan, Ogdensburg and Kennebec railroads—in all nearly 800 miles of new track, opening to us the interior of New Hampshire, Maine, Vermont, northern New York, lakes Champlain and Ontario, and the Canadas.

"Subjoined is an estimate of the amount our citizens have embarked in a few leading enterprises—principally since the spring of 1846, viz:

In factories and manufacturing cities on the sites enumerated	$13,000,000
Purchase of railroads out of the state	8,000,000
Expansion of old lines of railroad	6,000,000
Construction of new railroads in Massachusetts	7,000,000
Construction of new lines out of the state	12,000,000
Boston aqueduct, estimated cost with reservoirs and dead interest	4,000,000
Stock taken in United States loan	7,000,000
Total	57,000,000

"Amount unpaid less that $7,000,000 July 20th, 1848. Estimated dividends to be received by citizens of Massachusetts, June to April, 1849,

From banks	$2,000,000
United States loans	400,000
Railroads	3,000,000
Factories	3,000,000
Accumulation saving banks	1,000,000
Total	10,000,000

"The valuation of the state for 1848, if the increase of value in Boston and its vicinity be any criterion, must exceed $450,000,000, and the annual accumulation can be little short of $22,000,000.

Susquehannah Extension.

The surveys of the routes for the contemplated extension of the Baltimore and Susquehannah railroad to a point at or near Harrisburg, have been completed. These surveys, it is stated, show three practicable routes on the west side of the Susquehannah, to terminate at the west end of the Harrisburg bridge. Two of these routes commence at York, and one at Wrightsville. The shortest of these routes would not exceed 25 miles, the maximum grade not more than 25 feet to the mile, and the cost would be about $600,000. The route on the east bank, by way of Wrightsville, Columbia, Marietta and Middletown, would make the distance from York to Harrisburg about 36 miles, but the cost of completing this route would only be some $300,000.

The details of the surveys, we understand, will soon be laid before the public, the route fixed upon, and subscription books opened.

Philadelphia and Charleston Steamers.

The Philadelphia Mercantile Advertiser of Saturday last has the following:

"The directors of the new steam ship line had a meeting in the commencement of this week, and decided upon a model for the purpose of building a vessel. It is their intention to have her in operation at the opening of navigation in the spring. We sincerely trust that this may be the case, and we do not doubt it from the well known character of the gentlemen composing the board. Nor can we leave this subject without compimenting the proprietors of the "Columbus," for their perseverance and energy in surmounting the difficulties under which she appeared to labor at the commencement of the trips. As a sea vessel, we always expressed the opinion that the Columbus was unequalled; her steaming qualities were not then as fully developed as they are now, and for several trips past she has made as good time as any of the New York vessels, and been as regular in her arrival and departure from both this city and Charleston. We are anxious to see both lines in full and favorable operation; the increasing business of the whole south with this city fully justifies our business men in opening every avenue of communication as rapidly as possible.—We believe that there is ample room for a line of steamers between this city and Charaleston twice a week; and while our neighbors of New York are straining every nerve to retain their southern trade, as well as increase it, let not our merchants fail in their endeavors, but go on liberally, supporting and encouraging every effort which tends to increase the trade of our city. Philadelphia possesses every advantage that will enable the merchants of the south and west to purchase their goods in this market, and the more speedy our business men are in completing their central railroad and Charleston steamers, the more rapidly will our trade increase with every section of that great and growing country."

Cotton Statistics of Griffin.

Cotton forwarded from Griffin, from September 1st, 1847, to May 1st, 1848, according to previous reports 24,940

In May	1,724
In June	1,393
In July	1,412
	30,499

The above, says the Georgia Jeffersonian, of 10th inst., is a true statement of the amount of bales of cotton brought to Griffin by wagon, and shipped by railroad, since the 1st of Sept. last, taken from the books of the railroad office. "It will be recollected that we have no feeders from other places to swell our estimates, as there is no account taken of the cotton simply passing through the town either by wagon or the cars. There is still a month remaining to complete the year, and supposing the shipment in that month to be only 531 bales, and the balance remaining in the warehouses only equal to that of the same time last year, the total receipts at this place for the year ending 1st Sept. next will be 31,000 bales, and the balance remaining in the warehouses will be at least 500 bales over last year, in which case our receipts for the year will be 32,000 bales."

Croton Aqueduct Bridge.

The high bridge, or Croton aqueduct bridge, over the Harlem river, is a construction which, viewed as a whole, regarding its length, its volume, its tunnels, its capacious and massive walled reservoirs, and its numerous leaping fountains, has propably never been surpassed by any similar work in the world. The bridge is about fourteen hundred feet in length, and rests upon fifteen lofty and beautiful arches of solid stone masonry. The height, from the foundation of the piers supporting the arches, to the top of the bridge, is about fifty feet, the piers being sunk some thirty feet below high water mark. From the highwater level to the underside of the crown of the arch it is one hundred feet, a height required by act of the legislature, to allow the passage of all vessels which can navigate the Harlem river. Eight of the arches are eighty feet span, and seven are fifty feet span. The top of the bridge is twenty-one feet in width. The centre of the top work is several feet lower than the sides, making a capacious channel or sort of canal, in which two lines of large iron pipes are laid to carry the water across the bridge. One line of the pipes is completed, and the Croton now makes its entrance into New York city, over that magnificent bridge. The other line of pipes will soon be completed, after which they are to be covered by a layer of earth two or three feet in thickness, to protect them from the frost. The top of the bridge will then probably be finished off in a manner suitable for travel. The Croton aqueduct is 40 miles in length. The Romans had some aqueducts longer, but New York may well be proud of its great work.

[From the Philadelphia "Commercial List."]

Pennsylvania Coal Trade for 1848.

From the Lehigh Mines.

The amount of coal shipped from the Lehigh mines during the week ending the 12th inst., and since the opening of the navigation, has been as follows:

	This week. tons.	Total this year—tons.
By Lehigh company, Aug. 15.	7,541 14	135,512 16
By Room Run "	3,779 04	67,856 13
By Hazleton	3,491 00	50,644 00
By Beaver Meadow	1,348 07	45,054 07
By Spring Mountain	1,971 01	41,242 00
By Buck Mountain	2,059 06	36,573 16
By Cranberry Mines	....	7,880 00
White Haven	1,007 00	4,932 16
Total	21,125 13	389,687 08

From the Schuylkill Mines.

The amount of coal forwarded by Reading railroad during the week ending the 17th inst., and since the 1st of January, has been as follows—

	Tons.
From Schuylkill Haven	12,875 02
" Pottsville	4,632 12
" Port Carbon	9,169 19
" Port Clinton	3,166 15
Total this week	30,044 08
Total this year	800,265 14

The amount of coal brought to market by the Schuylkill canal during the week ending the 17th inst., and since the opening of the canal, has been as follows:—

	Tons.
From Pottsville and Port Carbon	9,168 09
" Schuylkill Haven	3,628 14
" Port Clinton	928 08
Total this week	13,725 11
Total this year	247,247 19

Recapitulation.—Total Shipments this Season.

By Lehigh companies	389,687 07
By Reading railroad	800,265 14
By Schuylkill canal	257,247 19
By Delaware and Hudson canal	210,249 00
Total	1,647,450 01

Atlantic and Pacific Railroad.

This subject has attracted much attention of late. We have had but one opinion of the importance and the *necessity* of a railroad to the Pacific, since we saw that *our government* were pursuing a course by which all Mexico—yes, *all*, ALL MEXICO—would be absorbed in a few years. The work of "*absorption*" is much *more than half* accomplished already—and much sooner than we anticipated—and the other half will absorb itself in a few years—or in other words, the seeds are already down, and have taken *deep root*, which will revolutionize and Anglicise the remaining part of Mexico—within a *quarter* of a century—therefore we must now look to the means of easy and speedy access to the Pacific, and we are fully of the opinion expressed by Lieut. Naury, that "A railroad through the heart of the country to the most convenient point of our Pacific coast is greatly more in accordance with the true interests of the U. States, than any route by canal, or railroad, that can be constructed across the narrow neck of land between North and South America"—especially as neither work, at that point, would pass through the United States.

The subject is fully discussed by him in this article, and it is well worthy of record for future reference, therefore we give it at length.

National Observatory,
Washington, March 29, 1848.

Dear Sir: I have the pleasuae of sending you, as you requested I would do, a chart showing the relative distances to Monterey and the Columbia river from some of the principal points on the Atlantic coast. I have added such other information as, in my judgment, is calculated to throw light on the interesting subject, as to the best route across the country for reaching, by railroad, the Pacific coast of the United States.

I am clearly of the opinion that a railroad through the heart of the county, to the most convenient point of our Pacific coast, is greatly more in accordance with the true interests of the United States, than any route by canal or railroad that can be constructed across the narrow neck of land between North and South America.

A chief value of a railroad or canal consists in its collateral advantages, so to speak, by which I mean the advantages which the country and the people, in the vicinity of the improvement, derive from it; such as the increased value of land and property of various kinds.

The increased value which such property has derived from the railroads and canals in the United States, exceeds, I suppose, the original cost of the works themselves. This, therefore, may be considered a permanent value attached to property of our fellow citizens which no reverse of fortune, no enactment of laws, nothing but a destruction of the works themselves can ever destroy.

A canal between the two continents would not pass through the United States territory, and consequently the citizens of the United States would derive no such collateral advantages from it, or her statesmen the perogative of taxing such increased value for the revenues of the country; but they would derive them abundantly from a railroad running through the heart of the Union, and connecting its Atlantic with its Pacific ports.

In this fact is included one of the many reasons which induced me to favor a railroad across the country, in preference to a canal out of the country for connecting the two oceans.

The question, therefore, is: Where shall the railroad begin on the Atlantic, and where shall it end on the Pacific?

Unfortunately, the present state of topographical information as to the several routes that have been proposed for reaching the Pacific by railroad, is not sufficient to afford a satisfactory reply to this question. I propose to consider it therefore only in a geographical and commercial point of view, leaving the final decision of the question for hydrographers and engineers after they shall have made the necessary examinations and surveys.

If we continue to increase our tonnage for the next three or four years at the rate of increase for the last two or three, the shipping of the United States will then exceed that of Great Britain, and the commercial supremacy of the seas will be ours, so far, at least, as the fetching and carrying is concerned.

If you will examine the accompanying chart, you will observe that I have drawn, *geographically*, the dividing line of commerce between England and the United States.—Any point in this line is equidistant from us and from England; consequently England is nearer to all places, including the ports of Europe, the Mediterranean, and of Africa, north of the equator, which are to the east of that dividing line, and *geographically* speaking, therefore, can meet us on that side of it with advantage; whereas all places on this side of that line, including her American colonies, the West Indies, and the states of central and South America as far as the equator are, *geographically*, more favorably situated for commerce with the United States than with England.

Now it so happens that this dividing line crosses the equator at what may be considered the great thoroughfare of vessels trading to the south of it, whether they be English or American, or whether they be bound around Cape Horn or the Cape of Good Hope.—The winds are such as to make this the common and best place of crossing for all such vessels.

Consequently, *geographically* speaking the ports of Brazil, of the Pacific ocean, China, and the East Indies, are as convenient to the Atlantic States of the Union as they are to England; and the merchandise of the two countries may be said to meet there precisely on equal terms.

Hitherto, the great channels of trade have led to Europe; yet, notwithstanding that the position of England is much more central than that of the United States with regard to Europe, (the vessels of the former making in a week, voyages which it takes ours months to accomplish,) we have, under these disadvantages, never ceased to gain on our competitor, and are now about to pass her, with our ships, in the commercial race.

The coasts of Oregon and California are just beginning to feel the energy of American enterprise, and are fast filling up with our citizens. Where they go, the commerce will come. The peopeling of these coasts will greatly enlarge the commercial limits of the United States: extending them from lines into a greatly elongated ellipse with its conjugate centres, one on the Pacific, the other on the Atlantic.

Having determined what port on the Pacific offers the most advantages for the commercial focus there, it will then be easy to project the major axis of this new commercial curve; for the line across the country which joins these two centres, will show geographically, the best route for a railroad between these two oceans.

The shortest distance between two places that are not on the equator, or in the same longitude, is the arc of a great circle, included between them; and this arc appears on the chart as a curve I have drawn such curves on the chart, and called them great circle routes, because they show the route by which a traveller may go from place to place by accomplishing the smallest number of miles possible, supposing he could follow a line through the air.

You will observe that the great circle, which shows the shortest navigable route between Chili, all the ports of Peru, Ecuador, central America and Mexico, passes so near to Monterey, that if a steamer bound from Chili to Shaughae, in China, were to pursue the shortest route which it is possible to go, she would make Cape St. Lucas, in Lower California, and might touch at San Diego, Monterey, or San Francisco, by going less than 100 miles out of her way.

But if the point of departure were Panama then it would be 1000 miles nearer to make the great circle via Calafornia, than to follow the straight compass course by way of the Sandwich Islands.

Monterey or San Francisco, therefore, may be regarded as the great half way house on the commercial road between Pacific America and the Indies; and this route as the commercial circle of the Pacific ocean.

It will be observed that Astoria, in Oregon, occupies by no means such a central position with regard to the commerce of the world.

The line, commencing on the Pacific coast midway between Monterey and the mouth of the Columbia river, and drawn to Philadelphia, I have called the dividing line of travel between Monterey and the mouth of the Columbm. It is so drawn through the country that any given point on it is equidistant from those two places, so that a traveller who starts from any point south of this line is nearer to Monterey; but if he starts from a point the north of it, he is nearer to the mouth of the Columbia.

Table of distances from the English Channel.

To Boston, (shortest navigable distance for steamers.....miles,	2,670
Boston, via Albany and the lakes, to Chicago.	1,000
Chicago, by an air line, to Columbia river.....	1,650
Total.....	5,320
From English channel, via Philadelphia and Baltimore, Monterey.....	5,100
From English channel to Charleston, S. C., (by water).....	3,360
From Charleston to Memphis, (railroad).....	510
From Memphis to Monterey, (air line).....	1,500
Total.....	5,370

It thus appears that Monterey is quite as central to the European travel as is the mouth of the Columbia, with this advantage, however: the lakes are frozen up half the year, when the Columbia route is impassable; whereas if the travel from Eerope come as far south as Philadelphia, Monterey then is the most convenient port. In truth, Chicago is quite as near to Monterey as the mouth of the Columbia.

While Monterey is, therefore, altogether as convenient a halting place as the Columbia river for travellers from any part of Europe to China, it has decidedly the advantage with regard to the travel from three fourths of the States of the Union, from Brazil, the West Indies, and even from the Pacific ports of S. America.

Were a railroad constructed from Memphis to Monterey, passengers from Chili, Peru, etc., on arriving at Panama, would, instead of continuing on in the Pacific to California,

save two or three days by crossing over to Chagres, taking a steamer thence to New Orleans, and up the river to the Memphis and Monterey railroad, and so across the country.

For this reason, therefere, the route to China, via Charleston or New Orleans, to Memphis, and thence to Monterey, would, for all the travel to the south of us, be hundreds of miles nearer than the route up to Chicago and thence to the Columbia river; nearer for most of the States of the confederacy and as near for the rest.

The harbors of San Francisco and Monteray are good, and easy of ingress and egress. The mouth of the Columbia is difficult both of ingress and egress. In 1846, Lieut Howison, one of the most accomplished seamen in the navy, was wrecked in attempting to get to sea from that river. He chartered another vessel for himself and crew to get to Monterey, 600 miles; and though in sight of the open sea, and drawing but 8 feet of water, he was detained there 62 days, waiting for an opportunity to cross the bar. He was wrecked where the exploring expedition found water enough to float a 74.

Vessels in distress off the mouth of the Columbia river have been baffled in their attempts to enter, and finally, after sundry trials, have found themselves compelled to run down to the ports of California, where they are sure of getting an anchorage.

The railroad to the Pacific should terminate at that port which presents the most advantages for our future dock yard and great naval station on the Pacific. That port is not the Columbia river, for the reasons just stated. Moreover, the mouth of that river will be overlooked by the English, from the excellent ports of Vancouver's Island, and the Straits of Fuca. While our crippled vessels should be standing off and on, waiting to get in, they would fall an easy prey to inferior British cruisers, which in safety could watch their movements from the Straits of Fuca.

Monterey and San Francisco are beyond the reach of such serveillance; moreover they are in a better climate, and are midway our line of Pacific coast. They are in a most commanding position. During the naval operations in the Pacific against Mexico, our men of war beat out of the harbor of San Francisco in a gale of wind, so easy is it of ingress and egress.

The harbors of California are convenient for, and even now visited by our whalemen. Columbia river is not. There is a fleet in the Pacific of 300 vessels, engaged in this business, manned by 6 or 8000 of the best seamen of America.

In money and in kind they expend, annually, among the islands and ports of the Pacific, not less than one million of dollars.—The facilities which a railroad to California would offer in enabling them to overhaul, refit and communicate with friends and owners in New England, would attract this whole fleet there; and this vast amount of money would be expended in our own country and among our own citizens, instead of being disbursed, broadcast, as it now is, over that wide ocean. As long as there are breakers and a bar at the mouth of the Columbia, there can be in that harbor no attraction for our whale ships.

The coast of California is a favorite place of resort for the whale. They come there to breed.

The chart has two small circles of a radius of 3000 miles each; one drawn from the mouth of the Columbia, as a centre, the other from Monterey. The latter, from its facilities of ingress and egress, is in a geographical position to command the trade with all places within these circles, except, perhaps, the ports of British and Russian America.—For six months in the year, the difficulties in crossing the Columbia would place these places nearer to the ports of California by days, if not by weeks and months.

The chart also exhibits the geographical dividing lines of travel and of commerce.—The broken line through the island of Japan shows the dividing line of travel from London by the overland route, to India, and from London through the United States, by railroad from Charleston via Memphis to Monterey. The nearest route to London, from all places to the east of this line, is through the United States; but from all places to the west of it, the nearest route is through the Red sea and across the isthmus of Suez. These lines, as before stated, are all drawn without regard to time. They are mere georaphical lines, intended to represent distance in *nautcal* miles. Were the railroad across the country completed, and the lines drawn with regard to time, they might probably be extended a thousand miles or two further to the westward; for much of the distance to be overcome by the overland route is by water, and there is much less railroad travelling by that route than there would be by a railroad across the United States.

A passenger can accomplish as many miles in two days by railroad as he can in a week by water.

The other broken line shows the dividing line of travel between London via the overland route, and this part of the country via the Atlantic and Pacific railroad.

The continuous, and most westerly line, shows the dividing line of commerce between England, on the one hand, and our Pacific ports on the other, supposing the English ships to pass, as they have to do, the Cape of Good Hope.

This line exhibits many interesting facts, consequences and significations. Among them, it shows that the United States are now in a position, which will soon enable them, *geographically*, to command the trade of the entire east; and commercially speaking, our country is in the centre of the people of the earth, and occupies a position for trade and traffic with them which no nation that ever existed has held.

Hitherto in all parts of the world, except Europe and the West Indies, the ships of the two great competitors on the ocean have met on barely equal terms. An American and a British ship met in India, China, New Holland, the islands of the Pacific, or the ports of South America. One ship was owned in London or Liverpool, the other in some one of our Atlantic ports. To reach home, they both had to pursue the same route and sail the same number of knots. But now that Origon and California are *Americanized*, all of these ports are nearer; and the chief among them, at Bombay, Calcutta, Singapore, the ports of China, Japan, New Holland, Australia, Polynesia, and the islands of the east, many thousand miles nearer to the United States than they are to England.

Table of Distances by Sea.

	To England	To ports of California.
From Persian Gulf..... ...miles.	11,300	10,400
" Bombay.....	11,501	9,800
" Calcutta.....	12,200	9,300
" Singapore.....	12,300	7,400
" Canton.....	13,700	6,100
" Shanghae.....	14,400	5,400
" Jeddo.....	15,200	4,500
" New Guinea.....	14,000	6,000
" Northwest point of New Holland.....	11,800	7,800
" Northeast do.	13,500	6,900
" New Zealand.....	13,500	5,600

From Memphis, a certain point in the immense valley of the west, and one on the great natural and national highway from the gulf to the lakes, the distance via Panama and Sandwich Islands (the usual route) to China is 11,700 miles; but by the proposed railroad to Monterey and the great circle, thence to China, the distance is but 6,900 miles.

A railroad across the country in this direction would, therefore, it may be observed, shorten the present and nearest practicable route to China, near 5,000 miles; it would place us before the commercial marts of *six hnndred* millions of people, and enable us, geographically, to command them. Open the needful channels, unbridle commerce, leave it to the guidance of free trade, and who shall tell the commercial destiny of this country.

Rightly and wisely profiting by the advantages which are now opening to us, how long will it be before our sturdy rival will cease to be regarded as such, and when we shall have no competitor for maratime supremacy among nations.

From Monterey to Shanghae is 5,400 miles—midway between the two, and right on the wayside, are the Fox and Eleoutian islands, with good harbors, where a depot of coal may be made for a line of steamers; for the establishment of which, I undrstand, Mr. King, the chairman of the committee of naval affairs, in the House of Representatives, is preparing a bill.

Coal has been found on the surface, at San Diego and San Francisco, and Vancouver's or Quadra islands. Formosa and the islands of Japan abound with the most excellent qualities of this mineral. Supposing the vessels to be put upon this line to perform not better than the Great Western, and that the railroad from Charleston on the Atlantic, be extended to Monterey, on the Pacific, you might then drink tea made in Charleston within the same month in which the leaf was gathered in China.

The passage from Sanghae, allowing a day for coaling at the Fox islands, can be

made in 26 days to Monterey, and thence to Charleston by railroad, at the English rate of 40 miles an hour, in less than three days.

Hydrographical surveys and topographical reconnoissances may show San Diego or San Francisco to be the best terminus for the great railway. I have spoken of Monterey merely from its *geographical* position. San Francisco is a better harbor, and has in its rear, a more fertile country. But whichever of the three be adopted, the selection will not alter the point I have been endeavoring to establish.

A railroad from Charleston to Tennessee is already completed. Memphis is above the yellow fever region of the Mississippi valley. It is on the great river, and in a central position. A road thence would cross the head waters of the Arkansas, the Rio Grande and the Colorado. It would facilitate the overland trade with Mexico, and perhaps be the principal channel of foreign commerce for her people.

Large amounts of bullion are annually shipped from western Mexico, in British ships of war, for England. Owing to the route, and the uncertainties as to the time when a vessel of war may come for it, it may be assumed that this bullion does not reach England for eight or ten months after it is taken from the mines; during all of which time it is of course idle. Moreover, it pays a freight of two per cent. to the British officer and Greenwich hospital for conveying it in one of her majesty's vessels. Now all this bullion would come, as fast as it is taken from the mines, over this road, and would perhaps be coined in our own mints instead of those of Europe.

This route, as compared with one to the Columbia river, is most convenient for a large portion of the citizens of Pennsylvania, all of Delaware, Maryland, Ohio, Indiana, Illinois, Missouri, and all of the States to the south of them; and, considering the present routes of travel, quite as convenient to the people of New England as is the proposed route to the Columbia.

Besides, this last will be obstructed by ice and snow in the winter; the other, never.—Therefore California offers the most convenient terminus for the commerce and business of all the states, and the most desirable one for the purposes of general government.

There is a line of steamers already in operation from Valparaiso, Lima, Guyaquil, and the intermediate ports to Panama.

Under Mr. King's bill of the last congress, contracts have been made for another line to connect with this, and to run to the mouth of Columbia, touching at Monterey or San Francisco. From Panama to China via Monterey, is 8,600 miles, and from Panama by water to Monterey, is 3,200 miles. Thus it will be observed that the steam communication has already been provided for more than one third of the distance from Panama to China.

A railroad to Monterey, and a line of steamers thence to China, would place our citizens only half the distance that they now are, and without such railroad must continue to be, from Japan and the Celestial Empire.

The most equitable location of a great national railway, to be constructed for the convenience of all the States, from the banks of the Mississippi to the shores of the Pacific, would be along the line which divides the United States territory west of the Mississippi into two equal parts. The main trunk would then be in the most favorable position for receiving lateral branches from all of the states hereafter to be formed out of that territory.—But the ports on the Pacific, and the character of the route, do not admit of such a location.

I have endeavored, as you suggested, to determine the geographical centre of the present *States* of the confederacy.

By one method, Memphis is as near that centre as may be; by the other it falls in Kentucky.

A line drawn diagonally across the States, from the northeast corner of Maine to the southwest corner of Texas, intersects another from southern Florida to the northwest corner of Iowa, a few miles from Memphis; and Memphis is just about half way between the mouth of the Mississippi and the head of the lakes, counting from lake Michigan.

But if we take two other lines; one dividing the territory comprehended within the states from north to south, the other from east to west, they will cross each other in Kentuck, and about midway a line between Nashville and Louisville. There are the two geographical centres of the States of the Union.

Now, if we take a point about midway between Memphis and Louisville, we shall have what, for practical purposes, may be called the territorial centre of the States of the Union I have marked this point A on the chart. It is near the mouth of the Cumberland. The centre of population is about the same parallel, but considerably to the eastward.

The great circle from this territorial centre to San Francisco, crosses the Mississippi just above the mouth of the Ohio, and crosses the edge of the Kansas valley. The distance of San Francisco from the Mississippi at this point, is 1,460 *nautical*, or 1,760 statute miles.

Were the country equally favorable, this would certainly be the most convenient route for all the states. It will be the business of the topographer, the engineer and the hydrograyher on the Pacific, to determine the most feasible line and the precise location of this great national highway.

There is, however another light in which this subject should be considered. A railroad to the Pacific is eminently a military road—and in the selection of a route, and a terminus for it, an eye should be had to its bearings as well to the common defence as to the general welfare.

Vancouver's island abounds in excellent harbors. Coal of superior quality has recently been found there, cropping out in great quantities on the surface. The English steamers on that coast use it, and pronounce it excellent. The Cormorant procured it at 4s. per ton, and took specimens of it to England. It is so accessible that the Indians mine it, and deliver it on board the Hudson's Bay company's steamers at a mere nominal charge.

That island is in a position which enables the power that holds it to command the straits of Fuca and the mouth of the Columbia more effectually, even, than Cuba, in the hands of a rival, would control the mouths of the Mississippi. By treaty Vancouver's island belongs to the English. In view of these facts no one with a military eye in his head would think of fixing the terminus of the great national highway, through which we aim to control the trade of the east, under the very guns of our rival. Vancouver's island enables England to command both the straits of Fuca and the mouth of the Columbia.

The mouth of that river can never become a naval station of much importance to us. It is too near Vancouver's island, which is to be the Portsmouth of England in the Pacific.—Its approaches are exposed and difficult, its egress dangerous. It is too far from the ports of California, and the coast, to be defended.

San Francisco will probably be the centre of our naval operations there. It is in a central, and therefore a commanding position. It offers many facilities which Astoria does not. Suppose Cuba belonged to Great Britain, and we were just beginning with a system of national defences for our Atlantic coast; it would be quite as reasonable to expect our ships from Pensacola to pass Havana and protect the coasts of New York, in a war with England, as it would be to expect them to come from the Columbia river, overlooked as it will be by the English from Vancouver's island, and give security to the ports and coasts of California.

Our Pacific coast is about 1000 miles in length. San Francisco is midway between its southern bountary and Vancouver's island, and, in a military point of view, is in a position to command 800 of the 1000 miles;—whereas, Puget's sound and Columbia river, owing to the close proximity of Vancouver's island and the dangerous bars of the river, are incapable of commanding so much as their three marine leagues each.

Respectfully, etc., M. F. Maury.

Hon. John C. Calhoun, *U. S. Senate.*

Comparative Value of the Gauges.

The following remarks on this subject, which still engrosses so much attention in England, are from the Railway Chronicle, and it may be useful to lay them before our readers.

After all that has been said on the question of relative resistance of trains on broad and narow gauges, the real merits of the system are to be decided on mercantile principles, even still more than on mechanical ones. Of the greater original first cost of a broad gauge railway no one entertains any doubt, neither does any one who knows the working of the lines practically entertain a doubt that the current cost of working it is greater, compared with the only standard by which it can be judged—namely, the narrow. The gross weight to be put in motion per passenger carried, and per ton of paying goods transported, is so much greater than on the narrow, that the result of a mercantile comparison is beyond all question in favor of the narrow.

These points have been so well brought out in a letter of Mr. Harding's to Mr. Creed

in 1846, that we think it instructive to reproduce the principal points of that letter at the present moment.

"There is one point, not the point at issue in the experiments, and therefore not referred to by Mr. Bidder, to which I take the liberty of drawing the attention of the directors of the London and Birmingham. It has, in my opinion, the most direct bearing on the practical value of the facts, in reference to the comparative power of engines (which had been tried on the two gauges) elicited in the late experiments, when the useful application of locomotive power to the daily traffic upon a line of railway is considered. It was a point also which I found, in the daily conduct of the traffic on the broad gauge railway continually forcing itself on the attention. I refer to the much greater gross weight which the broad gauge railway trains, whether for goods or passengers, are found to attain, as compared with trains on narrow gauge railways carrying the same useful or profitable load. To show what I mean, it is only necessary to give the following average weight of trains on different lines of railway. I extract the figures from the evidence of Mr. D. Gooch, the locomotive superintendent of the Great Western; they are those on which Mr. Gooch's arguments on comparative economy are based, to which I will presently refer.

	Broad gauge.	Narrow gauge.			
	Great Western.	Grand Junction.	London and Birmingham.	Birmingham and Gloucester.	London and South Western.
Average gross weiget of passenger traing in tons,—excluding engine and tender....	67	43	42	38	36
Average number of passengers at one time in the above trains.....	40*	50	85*	43	45

The average number of passengers is obtained in the case of the Great Western and London and Birmingham from the detailed statements given in to the commissioners. * The general fact indicated by the above figures may be checked by a consideration of the general position of the railways mentioned. * * As regards the goods traffic, the same general result proved conclusively at Gloucester, where goods are transferred from broad gauge wagons into narrow gauge wagons, and the broad gauge wagons, carrying identically the same goods as the narrow gauge wagons, are found on the average to weigh at least 35 per cent. more than the narrow gauge wagons which convey the same goods: this has been now tried for several months, and is always found to obtain. To apply this to the question of locomotive power:—We find the particular engine tried in the late experiment on the broad gauge to be, as Mr. Bidder proves, an engine of about 10 per cent. more power than the particular engine tested on the narrow gauge; but it seems from the figures I have quoted from Mr. Gooch, that the average gross train she will have in practice to draw will be 50 per cent. heavier on the broad gauge than on the narrow gauge, not because there are more people go by the trains, but on account of the construction of the vehicles on the broad gauge, and the impossibility of filling them, which is the case in the carriages of both gauges, but necessarily tells more in the weight of the train with the large carriages of the broad gauge. The additional power, therefore, in the broad gauge engine would thus be all absorbed, and more than absorbed, by the greater weight of its train. The useful and available power of the large engine would thus be actually less than that of the less powerful engine. The command of locomotive power, which depends on the excess of power as compared with the useful load of passengers, or whatever else it may consist of, will thus be greater on the narrow gauge even with an engine in itself 10 per cent less powerful than the broad gauge. And this is the point which the public and the companies have to look to, as it is this command of power which will affect the punctuality and despatch of travelling."

* Instead of 40 say 50; instead of 85 say 75, as these numbers will perhaps more truly represent the average numbers in the trains of these two railways one half year with another. At the time this report was written, there was a difficulty in obtaining the correct milage of trains and passengers, the evidence taken before the commissioners not being published—these corrections do not affect the argument.

Explosion of Steam Boilers.

We take the following report from the Journal of the Franklin Institute for June.

The Committee on Science and the Arts, constituted by the Franklin Institute of the State of Pennsylvania for the promotion of the mechanic arts, by whom were appointed a sub committee to examine into the cause of the explosion of a stationary engine in Dillwyn street, Philadelphia, on the 20th day of March, 1848,

REPORT,

That they examined the fragments of the boiler, and found that it had been cylindrical, 14 feet in length, and 18 inches in diameter, made of iron ¼ inch thick, and apparently not of very good quality. The rupture had taken place nearly in the middle of its length and presented the appearance of a clean cut around the boiler, just at the edge of one of the sheets of which it was composed, and exactly along the line which must have been followed by the calking tool. There was no tearing of the body of the sheet, and no irregularity in the line of fracture, except for about ½ inch in length at the lowest part, where there were some slight irregularities, as though the iron had torn there, after the rest had given way. Upon a closer inspection the mark of the caulking tool was plainly visible, and it was seen to have cut into the iron, sometimes to a considerable depth. The committee have no doubt that this carelessness in caulking the boiler materially weakened it, and thus determined the line of the fracture. It is proper to remark that it was stated to the committee, that the cylinder was not constructed for a boiler, but had been used as a condenser, and was bought by its late proprietor at second hand, and by him applied as a boiler.

The boiler had been placed in the second story of a frame building on the east side of Dillwyn street, and in the rear of the lots attached to the houses on Third street, and was used by a Mr. Reeve, to drive a small engine for the purpose of cutting tobacco. The boiler lay east and west, slightly inclining downwards to the east, which was the fire end.—The fire way extending from the front backwards, beneath the boiler, and was then returned by an outside flue, which lay above the ordinary water level of the boiler. A blower was attached to the engine; it appeared to have been recently added, and gentlemen who were familiar with the premises asserted that there was nothing of the kind when the boiler was first erected. The chimney stack being destroyed, the committee could not determine whether any defect had existed in the draft.

The westward, or back part of the boiler, had passed through the front of the house, and struck the dwelling on the opposite side of Dillwyn street, driving in the front wall. The fire end of the boiler passed across the whole lot between it and the houses in Third street, a distance of 112 feet, and struck the edge of a door way, in an 18 inch wall which it destroyed. Both these projections indicate a great force of steam; and upon examination the committee found a distinctly marked water line, showing that the depth of water at the point of fracture was only about 3 inches. There were, however, no conclusive marks of high heat on the iron.

Although the thickness of the iron had been reduced by the cutting of the caulking tool, and although the iron did not appear to be of very good quality, yet the committee believe that it was capable, with proper care, of bearing with safely, any pressure necessary for the light work which the engine had to do. Assuming the iron to have been but 1-16th inch thick, and taking its tensile strength at 50,000 pounds per square inch, it would have been capable of resisting a strain in the direction in which fracture took place, of more than 45 atmospheres pressure.

It is little singular that the boiler should have given way in the direction in which, by theory, it is considerably the strongest. For a tearing strain in the direction of the axis of the boiler, the resistance would have been equivalent to but 25 atmospheres (447 lbs. per square inch,) if we take 50,000 lbs.

A very simple calculation will suffice to show that the pressure within the boiler at the moment of explosion was enormous. In fact, if we suppose the boiler lying quite horizontal, the projectile force was sufficient to carry the eastern fragment over 112 feet, while it fell 12 feet by the action of gravity, that is in 0·866 sec. The projectile force, therefore, gave to a mass of about 300 lbs., a velocity of 130 feet per second.

In the opinion of the committee, therefore, the explosion of this steam boiler was owing to an excessive pressure of steam, probably generated instantaneously by the admission

of water to overheated metal, and the line of fracture was determined by the weakening of the iron at the junction of two of the plates by the careless use of the caulking tool.

By order of the committee.

WILLIAM HAMILTON, Actuary.

Propellers for Vessels.

As early as 1768, the screw was used by *Paucton* for propelling vessels; and we find that since his day, several others have attempted to improve upon his plan, or introduce others. The following article from the London Athenaeum may be useful to some of our readers.

Mr. Cowper commenced by an illustration of the law of resistance to a body moving through water. A disk of tin was drawn up from the bottom of a jar of water by one weight hung over a pulley—the time being measured by 20 beats of a pendulum. It was then drawn up in 18 beats (*i.e. twice* the velocity) by *four* weights—showing the resistance to be as the square of the velocity.—The disadvantages of the common paddle wheel were pointed out, and the various contrivances to obviate them, in the inventions of Buchanan, Oldham, Morgan, Field, Galloway, etc. A general index was given of the various screw propellers of

Paucton	in 1768
Bramah	1795
Shorter	1802
Fulton	1802
Trevithick	1815
Cummerow	1828
Woodcroft	1832
Smith	1836
Ericsson	1836
Lowe	1838
Blaxland	1841
Buchanan	1841

The general principles of the propeller, and the effect of a variety of forms, were illustrated by causing the peopellers to travel along a horizontal wire (about 8 feet long,) by giving them a rapid rotation. Woodcroft's propeller was explained. It consists in making the screw with an *increasing pitch*—the term pitch meaning the distance between the threads of the screw. A screw of uniform pitch is an inclined *plane* wrapped round a cylinder. A screw of increasing pitch is an inclined *curve* wrapped round a cylinder. If the blades of the propeller are bent so as to be somewhat hollow, this would make an increasing pitch. The experiments proved that a small portion of a blade of uniform pitch did the duty—the rest of the blade merely following in the wake of the effective portion; but by making the blade with an increasing pitch, each increasing portion overtakes the disturbed water, and so becomes effective.—Accordingly, the model, with Woodcroft's increasing pitch, flew along the wire rapidly; but when it was reversed, it would scarcely move. On a large ship a similar experiment was tried—making a difference of 20 per ct. when the screw was reversed. The Great Britain was fitted with Woodcroft's screw on her last voyage, and there is little doubt propelled the vessel *faster* than the captain was aware. A large diagram was shown (the full size) of the screw fitted to the Blenheim (74,) the Oak and the Termagrant (22 guns.) The screw consists of two blades. It is 16½ feet in diameter; the blade is 7 feet wide, and the twist or angle of the blade is such that when lying on the ground the upper edge would be 3 feet 4 inches high. The screw is let down through a water tight well at the stern of the vessel, and can be drawn up out of the water so as to give no impediment when the ship is sailing with a fair wind;—and yet the weight of the screw is 6½ tons, and the short iron shaft fixed in its centre 1¼ ton, making together 8 tons. The screw is of gun metal, and worth about £650. H.M. yacht Fairy was fitted with a screw propeller of two blades, 5 feet 4 inches in diameter.—She has two engines of 64 horse power each, and her speed is 15½ miles per hour. The Sarah Sands (1300 tons) is one of the best examples of auxiliary steam power. She has two oscillating engines of 180 horse power, driving, by direct action, a Woodcroft screw of four blades and 14 feet diameter.—She made the passage to New York in 20 days; while the sailing packets took 40, and has just returned from New York in *fourteen days*, and has frequently made 11 miles in the hour. After the lecture, Mr. Cowper explained the various engines used for driving the screw, and exhibited a large model of improved gearing for those cases in which toothed wheels were employed. The "wave line" form of vessel recommended by Mr. Scott Russell was also demonstrated by experiment.

Hudson River Railroad.

ENGINEER DEPARTMENT,
New York, 31st May, 1848.

To the Board of Directors of the Hudson River Railroad Company:

GENTLEMEN—I have prepared the following report on the business prospects of the road.

This subject has been more or less discussed in former reports, and papers submitted to the public. It is not intended to repeat the same here, but to extend somewhat those investigations, and to examine by subsequent statistics the probability of realizing the estimates formerly made. The railroads of Massachusetts, and more particularly those that have their termination in the city of Boston, are regarded as affording the best means in this country of showing the practical working of such improvement, and therefore a table has been prepared exhibiting the details of those roads. A similar table was presented in my report of the 12th of January last, embracing two more roads, but less full in its items. In addition to the table, several comparative and aggregate statements have been prepared, showing very important and interesting particulars relating to the progress of railroad business.

Before presenting any reasoning as to their application to this road, the principal facts above alluded to will be presented. It may be remarked, however, that the average cost per mile of the railroads in the following table, is about the same as the estimated cost of the Hudson River railroad, and they have about the same average of double track that is proposed for this.

Statistics of Railroads in Massachusetts, Terminating in Boston.—Business of 1847.

Name of Road.	Passengers. Miles run by trains.	Total number carried.	Average number per mile.	Receipts per mile per train.	Gross receipts.	Freight. Miles run by trains.	Tons carried.	Average tons per train.	Receipts per mile per train.	Gross receipts.	Current Expenses, Freight & Pass'rs. Per mile.	Total.	Velocity per hr. stops included. Passengers.	Freight.	Cost of Road. Per mile.	Total.	Dividend per cent.	Length of Road. Double track.	Single track.	Branches.	Total length.	Miscellaneous receipts.
Boston and Lowell	164,706	484,633	58	$1 27	$209,611	70,749	281,441	100	3 39	$234,815	$1·076	$263,408	Miles. 22·1	Miles. 19	$70,869	$1,956,719	8	Miles. 25·76	67·97	1·66	27·62	$4,124
Boston and Maine	227,583	728,307	55	1 41	321,181	73,118	120,438	49	2 46	179,988	·680	205,026	20·	10	36,590	2,021,172	9	5·	9·65		82·58	10,339
Boston and Providence	169,107	487,478	51	1 34	226,103	51,954	87,605	59	2 27	115,173	·748	165,353	20·	12	53,460	2,644,715	9	15·75	26·25	6·60	47·60	19,031
Boston and Worcester	211,206	598,305	68	1 44	304,580	167,363	283,718	64	2 24	374,663	1·009	391,985	23·	9	70,162	4,113,609	10	44·62	14·		48·62	42,927
Boston and Fitchburg	158,140	494,035	51	1 04	165,091	70,359	244,476	74	3 96	209,528	·706	161,433	20·	10	46,533	1,406,723	10	5·11	46·61	51·72	17,116
Boston and Old Colony	105,105	389,994	47	1 18	124,775	27,944	42,707	97	1 50	41,527	·654	87,020	20·	12½	36,970	1,636,632	10		37·36	14·35	4,850
Boston and Eastern	203,392	682,896	63	1 68	343,372	33,804	41,047	34	1 49	50,455	·570	135,083	21·	15	50,580	2,937,306	6¼	16·	29·11	7·	58·08	31,013
Totals	1,257,677	4,075,698			1,694,713	495,284	1,101,429			1,908,147	·778	1,389,308	21·4	11·5	52,166	18,616,776	8·43	112·34	199·16	59·08	370·48	139,399
Average	180,382	582,242	57	1 32	242,102	70,755	157,347	57	2 32	272,592	·902	198,472	22·	10·	52,166	2,659,824	8·4	16·	28·56	8·44	52·92	19,914
Western R. R. (fr. Worcester to Albany)	236,677	368,111	76	2 12	502,322	513,772	274,691	55	1 53	785,345	·902	676,690	23·	10·	56,214	8,769,473	7·4	18·84	137·16		156·	37,968

Summary of the Preceding Table.

Total receipts,	$3,032,259,	av. pr mile, $8,185
" expenses,	1,389,308,	" 3,750
" net earnings,		" $4,435
" No. of passengers carried,		4,075,698
Daily average,		13,021
Average receipt from each passenger,		41½ cts.
" No. of passengers per train,		56
" receipts for do. per mile do.,		$1 34
" cost of road per mile,		$52,166
" dividends, 8 43 per cent.		
Average cost per mile per train for passengers and freight, for running expenses, including maintenance of way,		77·8 cts.

Comparison.	1846.	1847.	Increase.
Tot. No. pass.,	4,135,080	4,078,698	30 pr ct.
Tot. receipts,	$2,448,247	3,032,259	23·8 "

	1846.	1847.	Decrease.
Current expenses per mile run,	83 4 cts.	77 8 cts.	5·6 cts.

The facts presented in the above table show very important results in several particulars; and I beg the indulgence of the board while I call attention to some of them:

First—The number of passengers carried.

This is in numbers equal to about five times the whole population of the State of Massachusetts. The population of the counties through which the seven roads pass, by the census of 1840, was 650,370, including 97,000 in the counties adjoining, in the States of New Hampshire and Rhode Island; or the number of passengers was six and a half times the total population of the counties traversed by the railroads. It is believed the statistics of travelling do not produce a higher ratio of passengers to adjacent population by any mode of conveyance. It may be inquired, what is the cause of this extraordinary amount of travelling? Probably the active habits of intercourse among those people.—But what has caused this habit? It does not appear to have existed to any considerable degree prior to the construction of those railroads. When the Worcester, Lowell and Providence railroads (three of those in the table) were projected, or in course of construction, the friends and promoters of those roads, after carefully investigating the subject of travelling at that time, and after making allowance for the probable increase that would be realized by opening these new facilities for the public accommodation, estimated the annual number of passengers that would be carried on the three roads at 141,440—which is less than *one eleventh* of the number actually carried the past year. The actual number carried before the railroads were constructed could not have been more than one-twentieth of the number in the table. The travelling habit has therefore been substantially created by the facilities the railroads have afforded.

In 1839 a committee of the Massachusetts legislature, having the subject of railroads under consideration, remark, "On every railway yet opened, the actual transportation has far exceeded the recorded estimates formed on that existing in any period previous to their construction, and has been constantly increasing."

The counties on the immediate borders of the Hudson river, including Rensselaer and Albany, and those south of them, and dependent on the river as a means of communication, including the cities of New York and Brooklyn, contained in 1840 a population of 757,697. They enjoy the best steamboat facilities for travelling, which by many persons is supposed to be superior to that of railroads. If so, then according to population of contiguous counties compared with the railroads in the preceding table, the annual number of passengers should be 6¼ x 757,697, or 4,735,606. But the highest estimate of travelling on the Hudson river boats makes the annual number of passengers 1,500,000, or less than one third the ratio of that on the railroads given in the table. If the average of the railroads for the whole year, or winter and summer, be compared with the boats for the season of navigation, calling the season 230 days for the 1,500,000 passengers, then the ratio is one half as great by the boats as by the railroads. Now there are other sources besides the contiguous counties in both cases that have an important bearing on the amount of travelling. On the railroads, the travelling between New York and Boston, and between Boston and a large portion of New Hampshire, Vermont, Maine and Connecticut, passes over them. On the Hudson river, exclusive of those on the borders of the route under consideration, is concentrated the travelling of near one and a half millions in the State of New York, besides that from Vermont, Canada and the western States. It is the route of a large amount of fashionable travelling to Niagara Falls, to Saratoga and other watering places. As a route for general travelling, the Hudson river has a population and business, probably three times greater than is enjoyed by all the railroads in the table. So far, then, as population and business is regarded, the Hudson river boats, if they afford facilities for travelling equal to railroads, should transport annually about 5,000,000 of passengers, or at least three times as many as they do transport.

There is also the question of rate of fare, or charges, that influence travelling. This is about two and a half times greater on the railroads in the table than the average rates on the Hudson river boats.

It therefore appears, that leaving out of view the concentration of business from a distance, and comparing with population directly along the routes, and comparing the summer business on the boats with the average of the year, (winter and summer) on the railroads, the latter transport double the number of passengers at more than double the rate of fare, than is transported by the former.

It would be difficult to find more conclusive evidence of the superiority of railroad conveyance over that of the steamboats on the Hudson river. The distance travelled by each passenger is probably greater on the boats than on the railroads. The facilities for travelling from place to place, and for distances of five to fifty miles, by railroad, affording the opportunity of going and returning in a short time, greatly increases the number of travellers on them. The boats can only receive and discharge passengers at their regular landings, often ten or fifteen miles apart, which leaves a large amount of way travelling either not accommodated at all, or but partially accommodated, while the railroad would take them up and set them down at or near their own doors.

The time of running in each direction, and the comparatively slow speed of the boats, require so much time to make a journey and return, as to render the accommodation very indifferent. For instance, a traveller must consume from twelve to fourteen hours in the journey from Newburgh to Poughkeepsie and return, while two hours by the railroad would often give time to make the journey, transact his business, and be again at his usual occupation at home.

There are four steamboats per day, two up and two down, between Yonkers and New York, and also between Sing Sing and New York. Notwithstanding this accommodation from boats, there are from Sing Sing four daily stages, two out and two in, that run five miles over a hilly road to convey passengers to and from New York by the Harlem railroad, at double the charge by the boats.—From Yonkers six daily stages, three out and three in, run to the Harlem railroad, a distance of five miles, to obtain twelve miles by railroad to New York.

A little attention will show the great superiority of a railroad over the boats in accommodating the way travelling between the towns on the route. The influence of the railroad on the business between New York to the several towns on the route to Albany, Troy, and Saratoga, has been so much discussed in former reports, that it does not appear necessary to notice it further at this time. It will not be doubted, after an intelligent examination, that the way business will be doubled very soon after the railroad is opened, and the greatest part of it will be secured to the road.

My own views of the prosperity of the summer business for the Hudson River railroad have been based on the opinion, that this mode of conveying passengers was decidedly superior to that of steamboats on the best navigation. Every development gives strength to this opinion, and however slow the public mind is in appreciating the subject the demonstration only awaits the opening of a respectable portion of the road to dissipate all doubts, and show us that a double track is indispensable to accommodate the vast traffic that will offer. So far as this can be demonstrated by the working of existing railroads, as compared with the working of the steamboats on the Hudson, the question is settled, and there can be no doubt the additional travel the railroad will induce, will in two years after its opening be equal to the whole present travel by the boats. The railroad must take the best of this travel; and if the boats now average between 6 and 7000 per day, the railroad cannot perform its duty, and have a less amount including way and

through passengers. This is not more than would be due to it, leaving the boats as many as they now have, on the basis of the passenger business presented in the table: and when it is considered that the character of the road, and the magnitude of the trade, will permit the transportation at half the rate of fare charged on those roads, this estimate must be regarded as very moderate. From the great concentration, as before remarked, at Albany and Troy, the proportion of through travel will no doubt be greater on this road than on any other on this continent. Taking the lowest of the amounts above stated for daily travel, and computing the season to 220 working days, we have an aggregate of say 1,300,000 passengers. This is but little over half the number carried on some of the English railroads, that are but little longer, with competing lines to divide the traffic. Three tenths may be considered as through, and seven tenths way traffic. The latter averages between one quarter and one third the distance, or say 40 miles. With a double track and furniture complete, the road could in the same time transport 2,000,000 passengers.—It will be the interest of the company to have a double track laid as early as possible after the first is opened. That this will be necessary I do not entertain a doubt.

No great expectation has been indulged for summer freights, at the same time there are certain kinds of freight that will seek the railroad, especially that designed to supply the daily market of a great city, and will not regard cost so much as expedition. The reasons for this have been fully presented on former occasions, and will not be dwelt upon at this time.

In view of the considerations above presented, the following estimate of *summer trade* is given for the second year of its complete operation:

Summer Business.

300,000 through passengers, *a*	1·50,	$450,000
700,000 way "	50,	350,000
Freight, ...		50,000
Total receipts, ...		$850,000

It is confidently believed that the above will be regarded a low estimate by any intelligent mind familiar with railroad travelling and with the circumstances of the route of this railroad. But it is said the steamboats will run for one shilling and defeat the railroad. On this point I am of the opinion that the railroad will do a handsome business even though the steamboats run for nothing. It has superior powers on this route for accommodating the passenger trade, and if well conducted it can command the best portion of the travelling business, notwithstanding anything that can be done with steamboats.

The Winter Business of the Railroad.

When the river is obstructed by ice there can be no question the whole traffic, in both freight and passengers, will be commanded by the railroad. On this point, it is only important to examine as to the probable amount. The average time the river is closed by ice is about 100 days, and considering the uncertainty that attends the closing and opening of navigation, the railroad may be considered as having the command of the main business from 1st of December to 31st of March, or four months of the year.

It has been stated on previous occasions that the opening of facilities by good railroads would lead to a corresponding increase in the amount of winter business. The following statistical facts will show how far experience has supported this opinion.

Utica and Schenectady Railroad—78 miles.

1st Dec.	31st March.	Receipts. Freight & Freight.	passengers.
From 1844	to 1845,	$29,965	$86,771
" 1845	to 1846,	49,881	106,585
" 1846	to 1847,	91,304	148,049
" 1847	to 1848,	109,975	204,768

The increase in three years for freight and passengers together is 135 per cent. The increase in freight alone is 267 per cent. in three years.

Western Railroad, Albany to Worcester—156 miles.

		Total Receipts.
Dec. 1st, 1844 to March 31,	1845,	$200,270
" 1847 to "	1848,	362,128

Increase in three years, 80 per cent.

In my report of January, 1846, it was estimated the Western road would reach $220,000 for the winter months of that year. They proved to be about $265,000, (the exact returns in full not obtained.) In the prospectus, published by the commissioners in June of that year, it was estimated that the receipts for the four winter months on that road, for the year 1849, would be $330,000. It now appears they were $362,128 for the winter of 1847 and 1848, a season of no unusual press of trade. The business is increasing so rapidly on this road (Western) that a double track is found necessary for its accommodation, which is in course of construction; and it is expected 50 miles will be laid down this season. There can be no reasonable doubt the winter trade of this road will exceed $400,000 before the Hudson River railroad can be opened to Albany. The Western road is about the same length (a few miles longer) as the Hudson River railroad. What are the comparative advantages for trade?—First, as to contiguous population. Taking the entire population of Massachusetts from the west line of the State to the east line of Worcester county, (being 10 miles east of the termination of the road at Worcester,) adding twelve per cent. to the census of 1840, as the increase to 1845, is 262,228. Add to this, the counties of Columbia, Rensselaer and Albany, and the total of what may be regarded contiguous population, is 449,810. On the Hudson river line, taking only the river counties from Albany and Rensselaer south, less one sixth of Dutchess, one half of Orange and Putnam, three fifths of Westchester, and including the city of Brooklyn, the total contiguous population is 797,390, or nearly double that on the Western road.

It has been seen that the business of freight on the Utica and Schenectady railroad has increased for the same winter months 267 per cent. in three years, while the trade of that road has had but very imperfect means of reaching the ultimate market which it naturally seeks. This road and others west to Buffalo, are being put in much better condition for business; when this is done, and canal tolls on the railroad are removed, (as they doubtless will be soon) its trade for the same winter months will no doubt be doubled at least. A railroad will soon be opened to Whitehall, 75 miles north of Albany, which will connect with other northern railroads, and contribute a large addition to the present winter business that centres at Albany and Troy. The inevitable tendency of railroads is to diffuse business more equally through the year. Instead of a press of business at the close and opening of navigation, (when water borne freights are often equal to or above railroad freights,) considerations of capital employed, fresh assortment of goods, and the condition of markets, will send a large amount of traffic to the railroads. The general course of trade from the country north and west of Albany and Troy is to New York. This concentration can only be compared to the radii of a circle, gathering a vast trade as to its centre, at the northern depot of the Hudson River railroad, which it must enjoy two thirds of the year. In addition to the consideration of the vast trade that centres to it, the road will have at its northern terminus the political capital of the State, with a population of 60,000, and 40,000 more in its immediate vicinity, and the commercial capital, with a population of half a million, at its southern terminus, presenting unusual inducements for winter travelling.

The subject only needs examination, and it is confidently believed that any intelligent mind will, on investigation, at once pronounce public opinion far behind the enterprise in regard to the extent of its usefulness and productiveness.

After much consideration, I have prepared the following estimate of the gross receipts that may be expected the second year of its operation from the business of the road. In submitting it I am fully pursuaded of the concurrence of intelligent business men, who will take the pains to look into the vast sources of trade that must centre upon it.—The friends of this great enterprise have only to look to its construction on a scale commensurate with the extent and character of the business it is to accommodate.

Estimated gross receipts the second year the road is in complete operation from this city to Albany.

Summer Business.

300,000 through passengers, *a*	1·50,	$450,000
700,000 way "	*a* 50,	350,000
Freight, ...		50,000
		$850,000

Winter Business.

Gross amount of freight and passengers double that of the Western railroad for the four winter months ending 31st March last, 362,128×

2=724,256, say,	730,000
U. S. mail for the year, 1st class	40,000
	770,000
Total for the year,	1,220,000
Working expenses and maintenance of way,	819,000
Net earnings,	401,000

Respectfully submitted,
JOHN B. JERVIS, Chief Engineer.

Summary of Curves and Straight Lines.

No. of curves	Length of curve in miles.	Radii in feet.	Deflection in degrees.		Total deflection in degrees.	
2	·3249	1000	117°	42'		Peek-[skill depot.
4	·5320	2000	80	29		
9	2·3442	2062	334	35		
1	0·3725	2475	119			
10	1·8036	2507	217	30		
8	1·1100	3000	112	59		
92	19·5662	3094	1776	30		
1	0·6640	3375	33			
4	0·8920	3570	75	35		
7	1·5230	3713	124	10		
3	0·3990	4000	30			
17	3·6200	4036	271	13		
30	6·7160	4125	495	29		
2	0·3570	4528	23	51		
10	2·9760	4641	194			
3	0·5700	5000	34	24		
14	2·5411	5156	149	7		
5	1·0930	5305	51	20		
2	0·2660	6000	13	15		
36	6·2715	6188	304	35		
1	0·3150	7000	13	37		
1	0·0200	7140		50		
1	0·1840	7426	18			
1	0·3835	7735	15			
2	0·4990	8000	18	49		
2	0·5451	8071	20	28		
7	1·8500	9282	60	20		
1	0·1850	10000	5	32		
3	0·4926	10313	14	27	4797	47
379	58·4169	Miles curved line.				
	83·9918	Do, straight, (to fort Canal st.)				

Statement of Receipts and Expenditures of the Hudson River Railroad Company from March 1st, 1847, to May 31st, 1848.

RECEIPTS.*

Payment on instalments called for,	$1,370,180 00
In addition to the capital of $3,016,500, the company have authority to issue stock to the amount of $300,000, for the purpose of paying interest. Of this stock there has been issued at par 374 shares,	37,400 00
Amount received for interest on deposits with the N. Y. Life Insurance and Trust C., to November 1st, 1847,	†14,161 88
Total receipts,	$1,430,741 88

* Payments have been made in full at the office of the company on subscriptions to the amount of 470 shares, and in Poughkeepsie on the amount of over 500 shares; the sum received for the latter am't is not however included in the above statement of receipts, the payments having been made but recently, are not yet on the books of the company in New York.

† In addition to this item, interest is due the company on deposits with the Trust Company since 1st November last, estimated at $14,500.

EXPENDITURES.

Grading, . . . of road,	$330,861 37
Land for 46 mil . . .	282,839 44
Land for de . . .	128,181 51
Expens[illegible]cluding office salaries, rent, salaries of engineers and and commissioners, and expenses connected with procuring land, ...	93,246 44
Iron, ...	53,673 03
Cross sleepers, ...	547 30
Interest payment of Nov., 1847,	25,249 13
" " May, 1848,	28,999 96
	943,598 08
Leaving a balance on hand, May 31st, 1848, of . .	$487,143 80

JOHN M. HOPKINS, Secretary.

Table of grades on the Hudson River railroad between Thirty-second street, in the city of New York, and Albany.

Distance	Inclination per mile.	Ascent.	Descent.	Total ascent and descent.
Miles.	Feet.	Feet.	Feet.	Feet.
100·000	Level.			
9·204	0·271	2·5		2·5
5·993	0·500	3·		3·
1·759	1·136	2·		2·
2·454	2·445	6·		6·
1·	5·	5·		5·
2·250		22·5		
3·007			30·	
2·006	10·	20·		127·5
2·505			25·	
1·503		15·		
1·503			15·	
2·301	13·	30·		30·
2·240	13·160		30·	30·
0·504	15.	7·5		7·5
138·450		113·5	100·	213·5
3·958	Distance from 60th street to the foot of Canal street, through which the grades are adjusted to the corporation regulations.			
142·408	Total distance from Greenbush (Albany,) to the foot of Canal street, New York.			

Explosion of the Locomotive Engineer, on the Reading Railroad.

From the Journal of the Franklin Institute.

The "Engineer" engine, belonging to the repairing department, started early on Monday morning, May 1st, from Pottstown, with a train of cars loaded with materials for distribution upon the line. When she left Pottstown, she was in charge of the fireman of the "Rocket" engine, named Christopher Gaffney, who proceeded as far as Reading, where the regular engineer of the Rocket, Wm. Nagle, was waiting to take charge of her. The reason why the fireman had charge of her from Pottstown to Reading, was, that Nagle, the regular engineer, had his family residing in Reading, and was in the habit of visiting them almost every Saturday evening, and spending Sunday with them, and on Monday morning would take charge of his engine as she passed Reading, as was the case on the morning of the accident.

Gaffney was considered a good man, and had frequently run engines for a week at a time, when anything occurred to make an extra engine necessary in that department.

The reasons why the engineers were changed, are simply these. The Rocket engine, of which Wm. Nagle was the engineer, required some repairing to be done to her.—She was taken into the shop under the direction of Wm. Sessford, engineer of the Engineer engine, who was considered a better mechanic, and had been in the habit of attending to all repairs of macninery in that department, although he was not considered a better engineer. While Sessford attended to the repairs of the Rocket, Nagle was transferred to the Engineer engine, who had frequently run her, and other engines before, under similar circumstances.

When the Engineer left Pottstown, she had a train of eight 8-wheeled platform cars, lightly loaded with materials. She was blowing off freely, as was usually the case with her when starting, as she made steam fast while standing still. She was hot, but not dangerously so. She stopped several times between Pottstown and Reading, to unload materials, and when she arrived at Reading, she was not observed to blow off in a very remarkable manner, nor did she appear very hot.—She stopped at the Reading station, about 10 minutes to take in wood and water, and then proceeded without any cause of alarm, on her way up the line. When about half a mile above the station, the explosion took place. The cause of the explosion is attributed to the low state of water, when she arrived at the Reading station, which is supposed to have caused the crown sheet of the fire box to become very much heated, and the pressure upon it being so great, that it forced it to give way.

There are other reasons given, causing the explosion—such as imperfection of the work, etc., but the opinion of those with whom I had conversation about this matter, and who I consider more conversant on the subject, agree that it was owing to the low state of water, when she arrived at Reading; and I have no doubt, if the matter was properly investigated, it would prove similar to that of the Neversink.

The engine was running backward at the time, and her position to the train was, with her front or bumper attached to the cars,—placing the tank of the engine at the head of the train. Her safety valve was found after the explosion, set at 80 pounds to the square inch. The engine was not much shattered, but was thrown across the other track.

This, then, is all that I can give in regard to this dreadful calamity, as both the engineer and fireman were killed by the explosion, who alone could have furnished us with a correct account, had their lives been spared. But as it is, we must attribute it to the most reasonable cause, although something else might have been the cause of the explosion.

TO MACHINISTS & MANUFACTURERS.
The Subscribers have taken the READING CAR AXLE MANUFACTORY—and are prepared to execute orders for *Axles of every description*, and Wrought Iron Shafts for Steamboats, Mills, etc., made from superior material, at short notice. Address *Reading, Pa.*
ANDREW TAYLOR & CO.
August 5, 1848—3m*

DIRECT ACTION ENGINES FOR STEAMBOATS.

THE PATENT DOUBLE CYLINDERS,
AND ALSO
THE ANNULAR RING PISTON ENGINES,

of Messrs. Mauldslay, Sons & Field, of London, may be built in the United States, under license, which can be obtained of their agent,

THOMAS PROSSER, C. E.,
28 Platt street, New York.

May 6, 1848.

WILLIAM JESSOP & SONS,
CELEBRATED CAST-STEEL.

The subscribers have on hand, and are constantly receiving, from their manufactory,

PARK WORKS, SHEFFIELD,

Double Refined Cast Steel—Square, flat & octagon.
Best warranted Cast Steel—Square, flat & octagon.
Best Double and Single Shear Steel—Warranted.
Machinery Steel—Round.
Best and 2d gy. Sheet Steel—for Saws and other purposes.
German Steel—flat and sqr., "W. I. & S." "Eagle" and "Goat" Stamps.
Genuine "Sykes," L Blister Steel.
Best English Blister Steel, etc., etc., etc.

All of which are offered for sale on the most favorable terms, by WM. JESSOP & SONS,
91 John Street, New York.

Also by their Agents—
Curtis & Hand, 47 Commerce St., Philadelphia.
Alex'r Fullerton, & Co., 119 Milk St., Boston.
Stickney & Beatty, South Charles St., Baltimore.

May 6, 1848.

NEW PATENT CAR WHEELS.

THE SUBSCRIBERS ARE NOW MANUfacturing Metallic Plate Wheels of their invention, which are pronounced by those that have used them, a superior article, and the demand for them has met the most sanguine expectations of the inventors. Being made of a superior quality of Charcoal Iron, they are warranted equal to any manufacture.

We would refer Railroad Companies and others to the following roads that have them in use. Hartford and New Haven, Connecticut River Railroad, Housatonic, Harlem, Farmington, and Stonington.

SIZER & CO.
January 29, 1848. tf Springfield, Mass.

INDIA RUBBER RAILROAD SPRINGS.

These springs are now generally acknowledged to be far superior to steel. They are very much lighter—their power is more easily regulated—they are more elastic, and yet possess great strength, and they always retain their elasticity, and are not affected by extremes of cold or heat. The very easy motion which a Car possesses when fitted with these springs is at once perceptable. They are equally applicable to Engines and Tenders.

Railroad and other companies are requested to notice that the Patent for these springs was granted to *W. C. Fuller* by the United States Government, and that any parties vending or using such springs, without his license, infringe upon his Patent, and will be proceeded against for so doing.

G. M. KNEVITT, Agent for the Patentee,
78 Broad St., New York.

July 15, 1848.

TO RAILROAD CONTRACTORS. NASHVILLE AND CHATTANOOGA Railroad. On the 1st of August next Proposals will be received at the Railroad Office in Nashville, for the Graduation and Masonry of Forty Miles of the Nashville and Chattanooga Railroad, comprising a large am't of rock excavation, and *One Tunnel of Seven Hundred Yards in Length.*

CHARLES F. M. GARNETT,
5t27 Chief Engineer.

RAILROAD IRON AND LOCOMOTIVE Tyres imported to order and constantly on hand by A. & G. RALSTON
Mar. 20tf 4 South Front St., Philadelphia.

MATTEWAN MACHINE WORKS.

THE MATTEWAN COMPANY HAVE added to their Machine Works, an extensive LOCOMOTIVE ENGINE department, and are prepared to execute orders for *Locomotive Engines* of every size and pattern—also, *Tenders, Wheels, Axles,* and other Railroad Machinery, to which they ask the attention of those who wish such articles, before they purchase elsewhere.

STATIONARY ENGINES, BOILERS, ETC., Of any required size or pattern, arranged for driving *Cotton, Woollen,* or *other* Mills, can be had on favorable terms, and at short notice.

COTTON AND WOOLLEN MACHINERY, Of every description, embodying all the modern improvements, second in quality to none in this or any other country, made to order.

MILL GEARING,

Of every description, may be had at short notice, as this company has probably the most extensive assortment of patterns in this line, in any section of the country, and are constantly adding to them.

TOOLS.

Turning Lathes, Slabbing, Planing, Cutting, and *Drilling* Machines, of the most approved patterns, together with all other tools required in machine shops, may be had at the Mattewan Company's Shops, Fishkill Landing, or at

39 Pine Street, New York.
WM. B. LEONARD, *Agent.*

FAIRBANKS' RAILROAD SCALES.

THE Subscribers are prepared to construct at short notice, *Railroad* and *Depot Scales,* of any desired length and capacity. Their long experience as manufacturers—their improvements in the construction of the various modifications, having reference to strength, durability, retention of adjustment, accuracy of weight and despatch in weighing—and the long and severe tests to which their scales have been subjected—combine to ensure for these scales the universal confidence of the public.

No other scales are so extensively used upon Railroads, either in the United States or Great Britain; and the manufacturers refer with confidence to the following in the United States.

Eastern Railroad,	Boston and Maine R. R.,
Providence Railroad,	Providence & Wor. R.R.,
Western Railroad,	Concord R. R.,
Old Colony Railroad,	Fitchburg R. R.,
Schenectady Railroad,	Syracuse and Utica R. R.,
Baltimore & Ohio Road,	Baltimore & Susq. R. R.,
Phila. & Reading Road.	Schuylkill Valley R. R.,
Central (Ga.) Railroad.	Macon and Western R.R.,
New York and Erie Railroad;	

and other principal Railroads in the Western, Middle and Southern States.

E. & F. FAIRBANKS & CO.
St. Johnsbury, Vt.

Agents { FAIRBANKS & Co., 81 Water st. N. York.
{ A. B. NORRIS, 196 Market st., Philad.

April 22, 1848. 1y*17

PATENT HAMMERED RAILROAD, SHIP and Boat Spikes. The Albany Iron and Nail Works have always on hand, of their own manufacture, a large assortment of Railroad, Ship and Boat Spikes, from 2 to 12 inches in length, and of any form of head. From the excellence of the material always used in their manufacture, and their very general use for railroads and other purposes in this country, the manufacturers have no hesitation in warranting them fully equal to the best spikes in market, both as to quality and appearance. All orders addressed to the subscriber at the works, will be promptly executed. JOHN F. WINSLOW, *Agent.*

Albany Iron and Nail Works, Troy, N. Y.

The above spikes may be had at factory prices, of Erastus Corning & Co., Albany; Hart & Merritt, New York; J. H. Whitney, do.; E. J. Etting, Philadelphia; Wm. E. Coffin & Co., Boston. ja45

THE SUBSCRIBERS ARE PREPARED TO execute orders at their Phœnix Works for Railroad Iron of any required pattern, equal in quality and finish to the best imported.

REEVES, BUCK & CO.,
Philadelphia.
ROBERT NICHOLS, Agent,
26tf No. 79 Water St., New York.

CHILLED RAILROAD WHEELS.—THE undersigned are now prepared to manufacture their Improved Corrugated Car Wheels, or Wheels with any form of Spokes or Disks, by a new process which prevents all strain on the metal, such as is is produced in all other chilled wheels, by the manner of casting and cooling. By this new method of manufacture, the hubs of all kinds of wheels may be made whole—that is, without dividing them into sections—thus rendering the expense of banding unnecessary; and the wheels subjected to this process will be much stronger than those of the same size and weight, when made in the ordinary way.

A. WHITNEY & SON,
Willow St. below 13th,
Nov. 10, 1847. [tf.] Philadelphia, Penna.

THE SUBSCRIber has on hand a good assortment of his best Leveling and Surveying Instruments, among them his improved Compass for taking angles without the needle—also Bells, suitable for Churches, Railroad Depots, etc. ANDREW MENEELY.

West Troy, May 12, 1847. 1y*21

PATENT RAILROAD, SHIP AND BOAT Spikes. The Troy Iron and Nail Factory keeps constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years' successful operation, and now almost universal use in the United States (as well as England, where the subscriber obtained a patent) are found superior to any ever offered in market.

Railroad companies may be supplied with Spikes having countersink heads suitable to holes in iron rails, to any amount and on short notice. Almost all the railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

All orders directed to the Agent, Troy, N. York will be punctually attended to.

HENRY BURDEN, *Agent*

Spikes are kept for sale, at Factory Prices, by & J. Townsend, Albany, and the principal Iron merchants in Albany and Troy; J. I. Brower, 222 Water St., New York; A. M. Jones, Philadelphia; T. Jarviers, Baltimore; Degrand & Smith, Boston.

*** Railroad Companies would do well to forward their orders as early as practicable, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand.

ja45

TO LOCOMOTIVE AND MARINE ENgine Boiler Builders. Pascal Iron Works, Philadelphia. Welded Wrought Iron Flues, suitable for Locomotives, Marine and other Steam Engine Boilers, from 2 to 5 inches in diameter. Also, Pipes for Gas, Steam and other purposes; extra strong Tube for Hydraulic Presses; Hollow Pistons for Pumps of Steam Engines, etc. Manufactured and for sale by

MORRIS TASKER & MORRIS,
Warehouse S. E. corner 3d and Walnut Sts., Philadelphia. 1tf

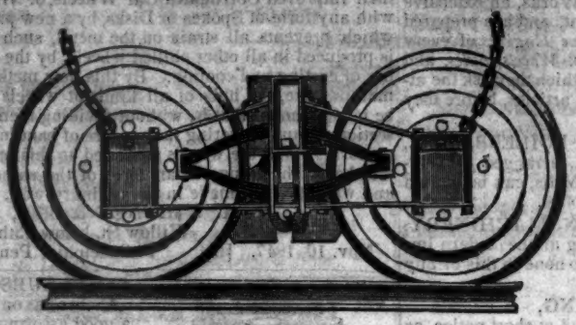
CHILLED RAILROAD WHEELS.—THE undersigned, the *Original Inventor* of the *Plate Wheel* with solid hub, is prepared to execute all orders for the same, promptly and faithfully, and solicits a share of the patronage for those kind of wheels which are now so much preferred, and which he originally produced after a large expenditure of time and money. A. TIERS.

Point Pleasant Foundry,

He also offers to furnish Rolling Mill Castings, and other Mill Gearing, with promptness, having, he believes, the largest stock of such patterns to be found in the country. A. T.

Kensington, Philadelphia Co.,
March 12, 1848. 11tf

RAY'S EQALIZING RAILWAY TRUCK.—THE SUBSCRIber having recently formed a business connection in the City of New



York, expressly for the manufacture of the newly patented and highly approved Railroad Truck of Mr. Fowler M. Ray, is ready to receive orders for building the same, from Railroad Companies and Car Builders in the United States, and elsewhere.

The above Truck has now been in use from one to two years on several roads a sufficient length of time to test its durability, and other good qualities, and to satisfy those who have used it, as may be seen by reference to the certificates which follow this notice.

There have been several improvements lately introduced upon the Truck, such as additional springs in the bolster of passenger cars, making them delightful riding cars—adapting it to tenders, trucks forward of the locomotive, and freight cars, which, with its original good qualities, make it in all respects the most desirable truck now offered to the public.

Orders for the above, will, for the present, be executed at the New York Screw Mill, corner 33d street and 3d avenue, (late P. Cooper's rolling mills) and at the Steam Engine Shop of T. F. Secor & Co., foot of 9th street, East river, (of which firm the subscriber was late a partner) under the immediat supervision of Mr. Ray himself.

Several sets of trucks containing the latest improvements have recently been turned out for the New York and Erie railroad, and the New Jersey Transportation company, which may be seen upon said roads.

The patronage of Railroad Companies and Car Builders is respectfully solicited.

New York, May 4, 1846. W. H. CALKINS, and Others.

To all whom it may concern:—This is to certify that the New Haven, Hartford and Springfield railroad co., have had in use six sets of F. M. Ray's patent trucks for the last 20 months, during which time it appears to me, they have proved to be the bes and most economical truck now in use.

[Signed,] WILLIAM ROE, Sup't of Power.

I certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Philadelphia and Reading railroad for some time past, under a passenger car.

For simplicity of construction, economy in cost, lightness of material, and extreme ease of motion, I consider it the best truck we have ever used. Its peculiar make also renders it less liable to be thrown off the track, when passing over any obstruction. We intend using it extensively under the passenger and freight cars of the above road.

Reading, Pa., October 6, 1845. [Signed,] G. A. NICOLL, Sup,t Transportation, etc., Philadelphia and Reading Railroad.

To all whom it may concern:—This is to certify that the N. Jersey Railroad and Transportation company have used Fowler M. Ray's Truck for the last seven months, during which time it has operated to our entire satisfaction. I have no hesitation in saying that it is the simplest and most economical truck now in use.

[Signed,] T. L. SMITH,

Jersey City, November 4, 1845. N. Jersey Railroad and Transp. Co.

This is to certify that F. M. Ray's Patent Equalizing Railroad Truck has been in use on the Long Island railroad for the last year, under a freight car.

For simplicity of construction, economy in cost, lightness of material and ease of motion, I consider it equal to any truck we have in use.

Long Island Railroad Depot, Jamaica November 12, 1845. } [Signed,] JOHN LEACH, 1y19 Sup't Motive Power.

TO RAILROAD COMPANIES AND BUILDERS OF MARINE AND LOCOMOTIVE ENGINES AND BOILERS.

PASCAL IRON WORKS.

WELDED WROUGHT IRON TUBES

From 4 inches to ¼ in calibre and 2 to 12 feet long, capable of sustaining pressure from 400 to 2500 lbs. per square inch, with Stop Cocks, T's, L's, and other fixtures to suit, fitting together, with screw joints, suitable for STEAM, WATER, GAS, and for LOCOMOTIVE and other STEAM BOILER FLUES.

Manufactured and for sale by

MORRIS, TASKER & MORRIS,

Warehouse S. E. Corner of Third & Walnut Streets,

PHILADELPHIA.

MANUFACTURE OF PATENT WIRE Rope and Cables for Inclined Planes, Standing Ship Rigging, Mines, Cranes, Tillers etc., by

JOHN A. ROEBLING, *Civil Engineer*,

Pittsburgh, Pa.

These Ropes are in successful operation on the planes of the Portage Railroad in Pennsylvania, on the Public Slips, on Ferries and in Mines. The first rope put upon Plane No. 3, Portage Railrord, has now run 4 seasons, and is still in good condition. 92v1 1y

NICOLL'S PATENT SAFETY SWITCH for Railroad Turnouts. This invention, for some time in successful operation on one of the principal railroads in the country, effectually prevents engines and their trains from running off the track at a switch, left wrong by accident or design.

It acts independently of the main track rails, being laid down, or removed, without cutting or displacing them.

It is never touched by passing trains, except when in use, preventing their running off the track. It is simple in its construction and operation, requiring only two Castings and two Rails; the latter, even if much worn or used, not objectionable.

Working Models of the Safety Switch may be seen at Messrs. Davenport and Bridges, Cambridgeport, Mass.; and at the office of the Railroad Journal, New York.

Plans, Specifications, and all information obtained on application to the Subscriber, Inventor, and Patentee G. A. NICOLLS,

ja45 *Reading, Pa.*

RAILROAD SCALES.—THE ATTENtion of Railroad Companies is particularly requested to Ellicotts' Scales, made for weighing loaded cars in trains, or singly, they have been the inventors, and the first to make platform scales in the United States; supposing that an experience of 20 years has given a knowledge and superior advantage in the business.

The levers of our scales are made of wrought iron, all the bearers and fulcrums are made of the best cast steel, laid on blocks of granite, extending across the pit, the upper part of the scale only being made of wood. E. Ellicott has made the largest Railroad Scale in the world, its extreme length was one hundred and twenty feet, capable of weighing ten loaded cars at a single draft. It was put on the Mine Hill and Schuylkill Haven Railroad.

We are prepared to make scales of any size to weigh from five pounds to two hundred tons.

ELLICOTT & ABBOTT.

Factory, 9th street, near Coates, cor. Melon st.

Office, No. 3 North 5th street,

1y25 Philadelphia, Pa.

LAP—WELDED

WROUGHT IRON TUBES

FOR

TUBULAR BOILERS,

FROM 1 1-2 TO 8 INCHES DIAMETER.

These Tubes are of the same quality and manufacture as those so extensively used in England, Scotland, France and Germany, for Locomotive, Marine and other Steam Engine Boilers.

THOMAS PROSSER,

Patentee.

28 Platt street, New York.

LAWRENCE'S ROSENDALE HYDRAulic Cement. This cement is warranted equal to any manufactured in this country, and has been pronounced superior to Francis' "Roman." Its value for Aqueducts, Locks, Bridges, Flooms and all Masonry exposed to dampness, is well known, as it sets immediately under water, and increases in solidity for years.

For sale in lots to suit purchasers, in tight paper-en barrels, by JOHN W. LAWRENCE,

142 Front street, New York.

☞ Orders for the above will be received and promptly attended to at this office. 32 1y

TO RAILROAD COMPANIES AND MANufacturers of railroad Machinery. The subscribers have for sale Am. and English bar iron, of al. sizes; English blister, cast, shear and spring steel; Juniata rods; car axles, made of double refined iron; sheet and boiler iron, cut to pattern; tiers for locomotive engines, and other railroad carriage wheels, made from common and double refined B. O. iron; the latter a very superior article. The tires are made by Messrs. Baldwin & Whitney, locomotive engine manufacturers of this city. Orders addressed to them, or to us, will be promptly executed.

When the exact diameter of the wheel is stated in the order, a fit to those wheels is guaranteed, saving to the purchaser the expense of turning them out inside. THOMAS & EDMUND GEORGE,

a45 N. E. cor. 12th and Market sts., Philad., Pa.

THE NEWCASTLE MANUFACTURING Company continue to furnish at the Works, situated in the town of Newcastle, Del., Locomotive and other steam engines, Jack screws, Wrought iron work and Brass and Iron castings, of all kinds connected with Steamboats, Railroads, etc.; Mill Gearing of every description; Cast wheels (chilled) of any pattern and size, with Axles fitted, also with wrought tires, Springs, Boxes and bolts for Cars; Driving and other wheels for Locomotives.

The works being on an extensive scale, all orders will be executed with promptness and despatch. Communications addressed to Mr. William H. Dobbs, Superintendent, will meet with immediate attention. ANDREW C. GRAY,

a45 President of the Newcastle Manuf. Co.

NORWICH CAR FACTORY,

NORWICH, CONNECTICUT.

AT the head of navigation on the River *Thames*, and on the line of the *Norwich and Worcester Railroad*, established for the manufactory of

RAILROAD CARS,

OF EVERY DESCRIPTION, VIZ:

PASSENGER, FREIGHT AND HAND CARS,

ALSO, VARIOUS KINDS OF

ENGINE TENDERS AND SNOW PLOUGHS,

TRUCKS, WHEELS & AXLES

Furnished and fitted at short notice.

Orders executed with promptness and despatch.

☞ Any communication addressed to

JAMES D. MOWRY,

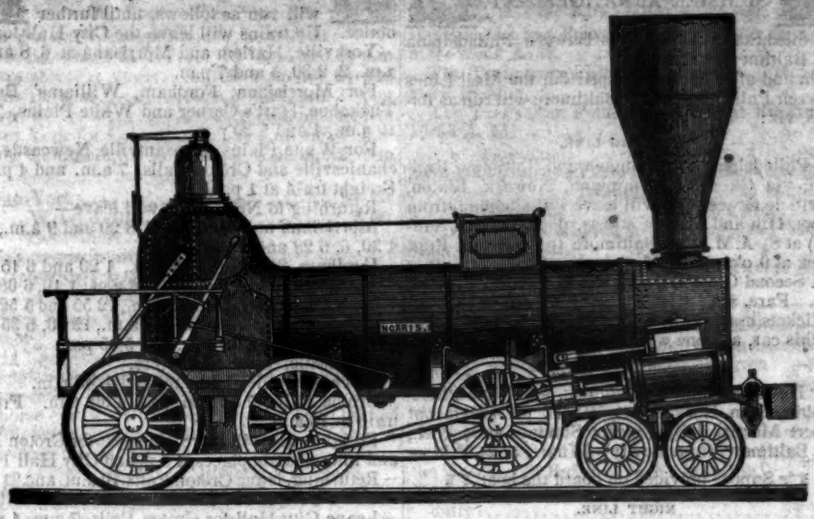
General Agent,

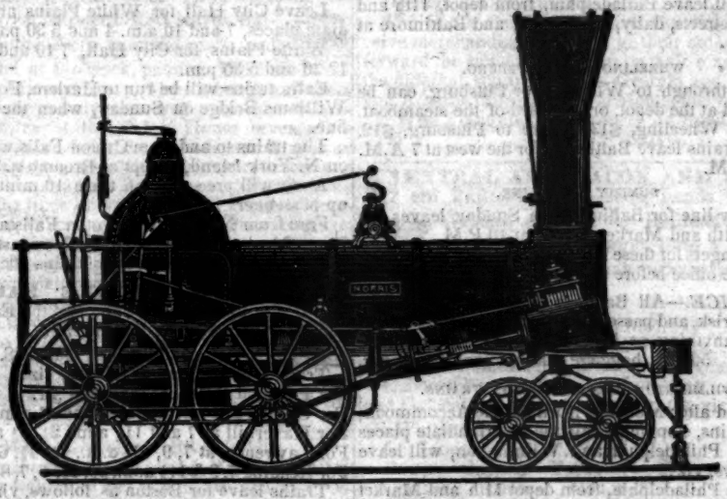
Norwich, Conn.,

Will meet with immediate attention. 1y8

NORRIS' LOCOMOTIVE WORKS.

BUSHHILL, SCHUYLKILL SIXTH-ST., PHILADELPHIA.





THE UNDERSIGNED Manufacture to order Locomotive Steam Engines of any plan or size.

Their shops being enlarged, and their arrangements considerably extended to facilitate the speedy execution of work in this branch, they can offer to Railway Companies unusual advantages for prompt delivery of Machinery of superior workmanship and finish.

Connected with the Locomotive business, they are also prepared to furnish, at short notice, Chilled Wheels for Cars of superior quality.

Iron and Brass castings, Axles, etc., fitted up complete with Trucks or otherwise.

NORRIS' BROTHERS.

MACHINE WORKS OF ROGERS, Ketchum & Grosvenor, Patterson, N. J. The undersigned receive orders for the following articles, manufactured by them of the most superior description in every particular. Their works being extensive and the number of hands employed beinglarge, they are enabled to execute both large and small orders with promptness and despatch.

Railroad Work.

Locomotive steam engines and tenders; Driving and other locomotive wheels, axles, springs & flange tires; car wheels of cast iron, from a variety of patterns, and chills; car wheels of cast iron with wrought tires; axles of best American refined iron; springs; boxes and bolts for cars.

Cotton, Wool and Flax Machinery

of all descriptions and of the most improved patterns, style and workmanship.

Mill gearing and Millwright work generally; hydraulic and other presses; press screws; callenders; lathes and tools of all kinds; iron and brass castings of all descriptions.

ROGERS, KETCHUM & GROSVENOR,
Paterson, N. J., or 60 Wall street, N. York.

PIG AND BLOOM IRON.—THE SUBSCRIbers are agents for the sale of numerous brands of Charcoal and Anthracite Pig Iron, suitable for Machinery, Railroad Wheels, Chains, Hollowware, etc. Also several brands of the best Puddling Iron, Juniatta Blooms suitable for Wire, Boiler Plate, Axe Iron, Shovels, etc. The attention of those engaged in the manufacture of Iron is solicited by

A. WRIGHT & NEPHEW,
12tf Vine St. Wharf, Philadelphia.

T. & C. WASON, Manufacturers of every style of Freight and Baggage Cars.—Forty rods east of the depot, Springfield, Mass.

Running parts in sets complete, Wheels, Axles, or any part of cars furnished and fitted up at short notice and in the best manner.

N.B. Particular attention paidto the manufacture of the *most improved* Freight Cars. We refer to the New Haven, Hartford and Springfield; Connecticut River; Harlem; Housatonic, and Western, Mass., Railroads, where our cars are now in constant use.

Dec.25, 1847.—1y.

SPRING STEEL FOR LOCOMOTIVES, Tenders and Cars. The Subscriber is engaged in manufacturing Spring Steel from 1¼ to 6 inches in width, and of any thickness required: large quantities are yearly furnished for railroad purposes, and wherever used, its quality has been approved of. The establishment being large, can execute orders with great promptitude, at reasonable prices, and the quality warranted. Address

JOAN F. WINSLOW, *Agent*,
1y Albany Iron and Nail Works,

IMPORTANT TO ENGINEERS, CONtractors, and Surveyors.—The Engineer's, Contractor's and Surveyor's Pocket Table Book, by J. M. Scribner, A. M., 264 pages, 24 mo; duck binding, with gilt edge. Published by Huntington & Savage, 216 Pearl street, New York.

The above work comprises Logarithms of Numbers, Logarithmic Sines and Tangents, Natural Sines and Natural Tangents; the Traverse Table, and a full and extensive set of tables, *exhibiting at one view the number of cubic yards contained in any embankment or cutting, and for any base or slope of sides usual in practice.* Besides these essential tables, the work comprises 50 pages more of Mensuration, Tables, Weights of Iron, Strength of Materials, Formulas, Diagrams, etc., for laying out railroads, canals and curves; much of which has never before been offered to the public, and all dispensable to the engineer. This book will prove a great saving of time, and will enable the new beginner to furnish results as accurately (and with much greater rapidity) as the most experienced in the profession without its aid. The tables of Logarithms, etc., have been carefully corrected and compared with *different* editions of the same tables; and *all* the tables throughout the book have been read carefully by proofs four times; hence the most implicit confidence may be placed in their correctness.

Also, *Scribner's Engineer's and Mechanic's Companion*, new edition, 264 pages, enlarged, with 35 pages of entirely new matter, and much improved throughout.

It is believed these books are so well adapted to suit the above professions, that they cannot *afford* to do without them, and that they will aid in rewarding well directed mental labor.

Both are for sale by all the principal booksellers throughout the United States and Canada.

WESTERN RAILROAD.—ON AND AFter Monday, April 5, 1847, the passenger trains will leave daily, Sundays excepted, as follows:

Boston at 8 a. m. and 4 p. m. for Albany.

Albany at 7 1-4 a. m. and 5 p. m. for Boston.

Springfield at 8 1-2 a. m. and 1 p. m. for Albany.

Springfield at 8 1-2 a. m. and 1 1-2 and 3 p. m. (or on arrival of the train from New York) for Boston.

Day line to New York, via Springfield.—The steamboat train leaves Boston at 6 a. m., and arrives in New York at 7 p. m., by the steamboats Traveller, New York, or Champion. Returning, leaves New York at 6 1-4 a. m., and arrives in Boston at 7 p. m.

Night line to New York.—Leaves Boston at m., and arrives in New York at 5 a. m.

Albany and Troy.—Leave Boston at 8 a. m., Springfield at 1 p. m., and arrive in Albany at 6 p. m.; or, leave Boston at 4 p.m., Springfield next morning at 8 1-2, and arrive in Albany at 1 1-2 p.m.

The Troy trains connect at Greenbush.

The trains for Buffalo leave at 7¼ a.m. and 7 p.m.

For Northampton, Greenfield, etc.—The trains of the Connecticut River Railroad leave Springfield at 8 1-4 a.m., 1 and 3 p.m., and passengers proceed directly on to Brattleboro', Windsor, Bellows Falls, Walpole, Hanover, Haverhill, etc.

For Hartford.—The trains leave Springfield on the arrival of the trains from Boston.

The trains of Pittsfield and North Adams Railroad leave Pittsfield on the arrival of the trains from Boston.

N. B.—No responsibility assumed for any baggage by the passenger trains, except for wearing apparel not exceeding the value of fifty dollars, unless by special agreement.

JAMES BARNES, Sup't and Eng'r.
C. A. SEAD, Agent, 27 State street, Boston.

GEORGIA RAILROAD. FROM AUGUSTA to ATLANTA—171 MILES.

AND WESTERN AND ATLANTIC RAILROAD FROM ATLANTA TO DALTON, 100 MILES.

This Road in connection with the South Carolina Railroad and Western and Atlantic Railroad now forms a continuous line, 408 miles in length, from Charleston to Dalton (Cross Plains) in Murray county, Ga.—32 miles from Chattanooga, Tenn.

RATES OF FREIGHT.		Between Augusta and Dalton. 271 miles.	Between Charleston, and Dalton. 408 miles.
1st class.	Boxes of Hats, Bonnets, and Furnature, per cubic foot.....	$0 18	$0 28
2d class.	Boxes and Bales of Dry Goods, Sadlery, Glass, Paints, Drugs and Confectionary, per 100 lbs.	1 00	1 50
3d class.	Sugar, Coffee, Liquor, Bagging, Rope, Cotton Yarns, Tobacco, Leather, Hides, Copper, Tin, Feathers, Sheet Iron, Hollow Ware, Castings, Crockery, etc.	0 60	0 85
4th class.	Flour, Rice, Bacon, Pork, Beef, Fish, Lard, Tallow, Beeswax, Bar Iron, Ginseng, Mill Gearing, Pig Iron, and Grindstones, etc.....	0 40	0 65
	Cotton, per 100 lbs.....	0 45	0 70
	Molasses, per hogshead.	8 50	13 50
	" " barrel....	2 50	4 25
	Salt per bushel.....	0 18	
	Salt per Liverpool sack..	0 65	
	Ploughs, Corn Shellers, Cultivators, Straw Cutters, Wheelbarrows...	0 75	1 50

German or other emigranta, in lots of 20 or more, will be carried over the above roads at 2 cents per mile.

Goods consigned to S. C. Railroad Co. will be forwarded free of commissions. Freight payable at Dalton.

F. C. ARMS,
Sup't. of Transportation.

Augusta, Ga., July 15, 1847. 44*1y

THE WESTERN AND ATLANTIC

Railroad.—This Road is now in operation to Oothcaloga, a distance of 80 miles, and connects daily (Sundays excepted) with the Georgia Rail road.

From Kingston, on this road, there is a tri-weekly line of stages, which leave on the arrival of the cars on Tuesday, Thursday and Saturday, for Warrenton, Huntsville, Decatur and Tuscumbia, Alabama, and Memphis, Tennessee.

On the same days, the stages leave Oothcaloga for Chattanooga, Jasper, Murfreesborough, Knoxville and Nashville, Tennessee.

This is the most expeditious route from the east to any of these places.

CHAS. F. M. GARNETT,
Chief Engineer.

Atlanta, Georgia, April 16th, 1846 1y1

CENTRAL RAILROAD—FROM SAVANnah to Macon. Distance 190 miles.

This Road is open for the transportation of Passengers and Freight. Rates of Passage, $8 00. Freight—

On weight goods generally... 50 cts. per hundred.
On measurement goods..... 13 cts. per cubic ft.
On brls. wet (except molasses and oil).....$1 50 per barrel.
On brls. dry (except lime).... 80 cts. per barrel.
On iron in pigs or bars, castings for mills, and unboxed machinery..... 40 cts. per hundred
On hhds. and pipes of liquor, not over 120 gallons.....$5 00 per hhd.
On molasses and oil.....$6 00 per hhd.

Goods addressed to F. WINTER, Agent, forwarded free of commission. THOMAS PURSE,
y40 Gen'l. Sup't. Transportation.

PHILADELPHIA, WILMINGTON & BALTIMORE RAILROAD.—1848.

SUMMER ARRANGEMENT.

United States Mail Lines between Philadelphia and Baltimore. Fare, $3.

On and after Monday, April 3d, the Mail Lines between Philadelphia and Baltimore will run as follows, viz:

MORNING LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, via Chester, Wilmington, Newark, Elkton, Havre de Grace, etc., will leave Philadelphia, from Depot, 11th and Market streets, daily (except Sunday) at 8½ A.M., and Baltimore from Depot, Pratt street, at 9 o'clock, A.M.

A Second Class Car will be run with the morning line. Fare, $2.

Tickets must positively be procured at the Office for this car, as none will be sold by the conductors.

AFTERNOON LINE.

Via Newcastle and Frenchtown, will leave Philadelphia, from Dock Street Wharf, per Steamboat Robert Morris, daily (except Sunday) at 2½ P.M., and Baltimore, from Bowly's Wharf, at 2½ P.M.—

☞ Supper provided on board the boat. ☜

NIGHT LINE.

Per Philadelphia, Wilmington and Baltimore Railroad, will leave Philadelphia, from depot, 11th and Market streets, daily, at 11 P.M., and Baltimore at 8 P.M.

WHEELING AND PITTSBURG.

Tickets through to Wheeling or Pittsburg, can be procured at the depot, or on board of the steamboat. Fare to Wheeling, $13. Fare to Pittsburg, $12.

The trains leave Baltimore for the west at 7 A.M. and 4 P.M.

SUNDAY MAIL LINE.

The only line for Baltimore on Sunday leaves the depot, 11th and Market streets, at 10 P.M.

Passengers for these lines must procure their Tickets at the office before taking their seats in the cars.

NOTICE.—All Baggage by these lines is at its owner's risk, and passengers are expressly prohibited taking anything as baggage, except their wearing apparel. 50 lbs. baggage allowed each passenger.

WILMINGTON ACCOMMODATION TRAINS.

On and after Monday, April 3d, the Accommodation Trains, stopping at all the intermndiate places between Philadelphia and Wilmington, will leave as follows, viz:

Leave Philadelphia, from depot 11th and Market streets, daily (Sundays excepted) at 1½ and 4 P. M.

Leave Wilmington, from the depot, Water street, daily (except Sunday) at 7½ A.M. and 4½ P.M.

The Freight Accommodation Train will leave Philadelphia at 7 P.M. and Wilmington at 7 P.M.

The Mail Trains stopping at Chester and Wilminton, leave Philadelphia at 8½ A.M. and 10 P.M. Wilmington at 1 o'clock, P.M., and 12 midnight. Fare to Wilmington, 50 cts. Fare to Chester, 25 cts.

G. H. HUDDELL, *Agent.*

March 23, 1848. 1y15

☞ NOTICE. ☜

RAILROAD LINE BETWEEN ALBANY AND BUFFALO, N. Y.

1848.—SCHEDULE FOR RUNNING.—1848.

Going west.		1st train.	2d train.	3d train
Leaves....	Albany....	7½ A.M.	2 P.M.	7 P.M.
Pass.....	Utica.....	1 P.M.	7½ P.M.	1½ A.M.
Pass.....	Syracuse...	4½ P.M.	11 P.M.	5 A.M.
Pass.....	Auburn....	6½ P.M.	1 A.M.	7 A.M.
Pass.....	Rochester.	12½ M.N.	7 A.M.	1 P.M.
Arrives at.	Buffalo....	5½ A.M.	12 M....	6 P.M.

Going east.		1st train.	2d train.	3d train.
Leaves....	Buffalo....	7½ A.M.	2 P.M.	7 P.M.
Pass.....	Rochester.	12½ M....	7 P.M.	12 M.N.
Pass.....	Auburn....	6½ P.M.	1 A.M.	6 A.M.
Pass.....	Syracuse...	8½ P.M.	3½ A.M.	8 A.M.
Pass.....	Utica.....	12 M.N.	7 A.M.	11½ A.M.
Arrives at.	Albany.....	5 A.M.	12 M....	4½ P.M.

Adopted February 18, 1848, in convention at Albany. (Copy.) T. Y. HOWE, Jr.,
Secretary of the Convention.

NEW YORK & HARLEM RAILROAD CO.—Summer Arrangement.—On and after

Tuesday, June 1st, 1847, the cars will run as follows, until further notice. Up trains will leave the City Hall for—

Yorkville, Harlem and Morrisana at 6, 8 and 11 a.m., 2, 2 30, 5 and 7 p.m.

For Morrisiana, Fordham, Williams' Bridge, Tuckahoe, Hart's Corner and White Plains, 7 and 10 a.m., 4 and 5 30 p.m.

For White Plains, Pleasantville, Newcastle, Mechanicsville and Croton Falls, 7 a.m. and 4 p.m. Freight train at 1 p.m.

Returning to New York, will leave—

Morrisiana and Harlem, 7, 8 20 and 9 a.m., 1, 3, 4 30, 6, 6 28 and 8 p.m.

Fordham, 8 08 and 9 15 a.m., 1 20 and 6 15 p.m.

Williams Bridge, 8 and 9 08 a.m., 1 10, 6 08 p.m.

Tuckahoe, 7 38 and 8 25 a.m., 12 55 and 5 52 p.m.

White Plains, 7 10 and 8 35 a.m., 12 50, 5 35 p.m.

Pleasantville, 8 15 a.m. and 5 15 p.m.

Newcastle, 8 a.m. and 5 p.m.

Mechanicsville, 7 48 a.m. and 4. 48 p.m.

Croton Falls, 7 30 a.m. and 4 30 p.m. Freight train at 10 a.m.

Freight train will leave 32d street for Croton Falls and intermediate places, 4 a.m and City Hall 1 p.m.

Returning, leave Croton Falls 10 a.m. and 9½ p.m.

ON SUNDAYS, the trains will run as follows:

Leave City Hall for Croton Falls, 7 a.m, 4 p.m.

Croton Falls for City Hall, 7 30 a.m., 4 30 p.m.

Leave City Hall for White Plains and intermediate places, 7 and 10 a.m. 4 and 5 30 p.m.

White Plains for City Hall, 7 10 and 8 35 a.m., 12 30 and 5 35 p.m.

Extra trains will be run to Harlem, Fordham and Williams Bridge on Sunday, when the weather is fine.

The trains to and from Croton Falls will not stop on N. York island, except at Broome st. and 32d st.

A car will preceed each train 10 minutes to take up passengers in the city.

Fare from New York to Croton Falls and Somers $1, to Mechanicsville 87½c., to Newcastle 75c., to Pleasantville 62½c. to White Plains 50c. 25tf

BOSTON AND MAINE RAILROAD.

Upper Route, to Portland and the East.

Summer Arrangement.

Commencing July 3d, 1848.

Trains leave Boston as follows, viz:

For Portland at 7 A.M. and 2½ P.M.

For Great Falls at 7 a.m., 2½ and 4½ p.m.

For Haverhill at 7 and 11½ a.m., 2½, 4½ and 6 p.m.

For Lawrence, at 7, 9, 11½ a.m., 2½, 4½, 6, 7 p.m.

For Reading 7, 9 & 11½ a.m., 2½, 4½, 6, 7, 8½ & 10 p.m.

Trains leave for Boston as follows, viz:

From Portland at 7½ a.m., and 3 p.m.

From Great Falls at 6½ and 9½ a.m., and 4½ p.m.

From Haverhill at 7, 8½ and 11 a.m., 3½ and 6½ p.m.

Lawrence at 6½, 7½, 8½, 11½ a.m., 12½, 3½, 6½, p.m.

Reading at 6, 6½, 7½, 9½, 11½ a.m., 1, 4, 7½, 9, 10 p.m.

MEDFORD BRANCH TRAINS.

From Boston at 6·50, 9½ a.m., 12½ 2½, 5½, 7, 10 p.m.

From Medford at 6·10, 7½, 10½, a.m., 2, 4, 6½, 9½ p.m.

STEAMBOAT TRAINS.

For BANGOR, every Monday, Wednesday and Friday, at 5 p.m.

For HALLOWELL, every Tuesday, Thursday & Saturday, at 7 a.m.

The Depot in Boston is on Haymarket Square.

CHAS. MINOT, *Sup't.*

Boston, July 3d, 1848.

BOSTON AND PROVIDENCE RAIL-

road. Summer Arrangement. On and after Monday, April 3, 1848, the Trains will run as follows:

Steamboat Train—Leaves Boston daily, except Sunday, at 5 o'clock p.m.

Accommodation Trains—Leave Boston at 7 and 11 a.m. and 4 p.m., and Providence at 7½ and 11 a.m. and 4½ p.m.

Pawtucket Train—Leaves Boston at 4 p.m. and Pawtucket at 7, 10 a.m.

Dedham Trains—Leave Boston at 8 a.m., and 12½ 3½, 6½ and 9 p.m. Leave Dedham at 7 and 9½ a.m. and 2½, 5½ and 8 p.m.

Stoughton Trains—Leave Boston at 11½ a.m. and 5½ p.m. Leave Stoughton at 7, 10 a.m. and 3½ p.m.

WM. RAYMOND LEE, *Sup't.*

BALTIMORE AND SUSQUEHANNA Railroad.—Reduction of Fare. Morning and Afternoon Trains between Baltimore and York.—The Passenger trains run daily, except Sunday, as follows:

Leaves Baltimore at	9 a.m. and	3½ p.m.
Arrives at	9 a.m. and	6½ p.m.
Leaves York at	5 a.m. and	3 p.m.
Arrives at	12½ p.m. and	8 p.m.
Leaves York for Columbia at	1½ p.m. and	8 a.m.
Leaves Columbia for York at	8 a.m. and	2 p.m.

FARE.

Fare to York	$1 50
" Wrightsville	2 00
" Columbia	2 12½

Way points in proportion.

PITTSBURG, GETTYSBURG AND HARRISBURG.

Through tickets to Pittsburg via stage to Harrisburg	$9
Or via Lancaster by railroad	10
Through tickets to Harrisburg or Gettysburg	3

In connection with the afternoon train at 3½ o'clock, a horse car is run to Green Spring and Owing's Mill, arriving at the Mills at ..... 5½ p.m.
Returning, leaves Owing's Mills at ..... 7 a.m.

D. C. H. BORDLEY, *Sup't.*
31 1y Ticket Office, 63 North st.

BALTIMORE AND OHIO RAILROAD. MAIN STEM. The Train carrying the Great Western Mail leaves Baltimore every morning at 7½ and Cumberland at 8 o'clock, passing Ellicott's Mills, Frederick, Harpers Ferry, Martinsburgh and Hancock, connecting daily each way with—the Washington Trains at the Relay House seven miles from Baltimore, with the Winchester Trains at Harpers Ferry — with the various railroad and steamboat lines between Baltimore and Philadelphia and with the lines of Post Coaches between Cumberland and Wheeling and the fine Steamboats on the Monongahela Slack Water between Brownsville and Pittsburgh. Time of arrival at both Cumberland and Baltimore 5½ P. M. Fare between those points $7, and 4 cents per mile for less distances. Fare through to Wheeling $11 and time about 36 hours, to Pittsburgh $10, and time about 32 hours. Through tickets from Philadelphia to Wheeling $13, to Pittsburgh $12. Extra train daily except Sundays from Baltimore to Frederick at 4 P. M., and from Frederick to Baltimore at 8 A. M.

WASHINGTON BRANCH.

Daily trains at 9 A. M. and 5 P. M. and 12 at night from Baltimore and at 6 A. M. and 5½ P. M from Washington, connecting daily with the lines North, South and West, at Baltimore, Washington and the Relay house. Fare $1 60 through between Baltimore and Washington, in either direction, 4 cents per mile for intermediate distances. s13y1

NORWICH AND WORCESTER RAILROAD. Summer Arrangement.—1848.

Accommodation Trains daily, (Sundays excepted.)

Leave Norwich, at 6 a. m., 12 m. and 5 p. m.
Leave Worcester, at 6½ and 10 a. m., and 4½ p. m. connecting with the trains of the Boston and Worcester and Providence and Worcester railroads.

New York & Boston Line. Railroad & Steamers. Leave New York and Boston, daily, Sundays excepted, at 5 p.m.—At New York from pier No. 1 N. River.—At Boston from corner Lincoln and Beach streets, opposite United States Hotel. The steamboat train stops only at Framingham, Worcester, Danielsonville and Norwich.

Freight Trains leave Norwich and Worcester daily, Sundays excepted.—From Worcester at 6½ a. m., from Norwich at 7 a.m.

☞ *Fares are Less when paid for Tickets than when paid in the Cars.* ☜
32 1y S. H. P. LEE, Jr., Sup't.

RAILROAD IRON—2500 TONS HEAVY H Rail, now landing, and expected shortly to arrive, for sale on most favorable terms by

DAVIS BROOKS & CO.
July 19th, tf 68 Broad street, New York.

PHILADELPHIA AND READING RAILROAD.—Passenger Train Arrangement for

1848.

A Passenger Train will leave Philadelphia and Pottsville daily, except Sundays, at 9 o'clock A. M.

The Train from Philadelphia arrives at Reading at 12 18 M.

The Train from Pottsville arrives at Reading at 10 43 A. M.

Fares.	Miles.	No. 1.	No. 2.
Between Phila. and Pottsville,	92	$3·50 and	$3·00
" " Reading,	58	2·25 and	1·90
" Pottsville "	34	1·40 and	1·20

Five minutes allowed at Reading; and three at other way stations.

Passenger Depot in Philadelphia corner of Broad and Vine streets. 8tf

SOUTH CAROLINA RAILROAD.—A Passenger Train runs daily from Charleston, on the arrival of the boats from Wilmington, N. C., in connection with trains on the Georgia, and Western and Atlantic Railroads—and by stage lines and steamers connects with the Montgomery and West Point, and the Tuscumbia Railroad in N. Alabama.

Fare through from Charleston to Montgomery daily	$26 50
Fare through from Charleston to Huntsville, Decatur and Tuscumbia	22 00

The South Carolina Railroad Co. engage to receive merchandize consigned to their order, and to forward the same to any point on their road; and to the different stations on the Georgia and Western and Atlantic railroad; and to Montgomery, Ala., by the West Point and Montgomery Railroad.

r25 JOHN KING, Jr, *Agent.*

CENTRAL AND MACON AND WESTERN Railroads, Ga.—These Roads with the Western and Atlantic Railroad of the State of Georgia, form a continuous line from Savannah to Oothcaloga, Ga., of 371 miles, viz:

	Miles.
Savannah to Macon—Central Railroad	190
Macon to Atlanta—Macon and Western	101
Atlanta to Oothcaloga—Western and Atlantic	80

Goods will be carried from Savannah to Atlanta and Oothcaloga, at the following rates, viz:

	To Atlanta.	To Oothcaloga.
On Weight Goods—Sugar, Coffee, Liquor, Bagging, Rope, Butter, Cheese, Tobacco, Leather, Hides, Cotton Yarns, Copper, Tin, Bar & Sheet Iron, Hollow Ware & Castings	$0 50	$0 75
Flour, Rice, Bacon in Casks or boxes, Pork, Beef, Fish, Lard, Tallow, Beeswax, Mill Gearing, Pig Iron and Grind Stones	0 50	0 62½
On Measurement Goods—Boxes of Hats, Bonnets and Furniture, per cubic foot	0 20	0 26
Boxes and Bales of Dry Goods, Saddlery, Glass, Paints, Drugs and Confectionary, per cubic foot	0 20 pr. 100 lbs.	35
Crockery, per cubic foot	0 15 " "	35
Molasses and Oil, per hhd., (smaller casks in proportion).	9 00	12 50
Ploughs, (large,) Cultivators, Corn Shellers, and Straw Cutters, each	1 25	1 50
Ploughs, (small,) and Wheelbarrows	0 80	1 05
Salt, per Liverpool Sack	0 70	0 95

Passage—Savannah to Atlanta, $10; Children, under 12 years of age, half price, Savannah to Macon, $7.

☞ Goods consigned to the subscriber will be forwarded free of Commissions.

☞ Freight may be paid at Savannah, Atlanta or Oothcaloga.

F. WINTER, *Forwarding Agent, C. R. R.*
Savannah, Aug. 15th, 1846. 1y34

NEW YORK ANDERIE RAILROAD LINE. SUMMER ARRANGEMENT. For passengers, twice each way daily, (except Sunday,) leave New York from the foot of Duane St. at 7 o'clock, A. M. and at 4 o'clock, P. M. by steamboat, for Piermont, thence by cars to Ramapo, Monroe, Chester, Goshen, Middletown, Otisville, and the intermediate stations.

The return trains for New York will leave Otisville at 6 30, A. M. and 4 15, P. M.; Middletown at 7 A. M. and 4 40, P. M.; Goshen at 7 22, A. M. and 5 3, P. M.; Chester at 7 35, A. M. and 5 18, P. M.

Fare between New York and Otisville, $1 50; way-fare in proportion.

FOR MILK—Leave Otisville at 5½ o'clock, morning and evening.

FOR FREIGHT—The barges "Samuel Marsh and "Henry Suydam, Jr." will leave New York (from the foot of Duane St.) at 5 o'clock, P. M. daily (except Sundays.)

No freight will be received in New York after 5 o'clock, P. M.

Freight for New York will be taken by the trains eaving Otisville at 10½ o'clock, A. M.; Middletown at 11½, A. M.; Goshen at 12½, P. M.; Chester at 1 o'clock, P. M., etc., etc.

For farther particulars, apply to J. F. CLARKSON, Agent, corner of Duane and West Sts., New York, or to S. S. POST, Superintendent Transportation, Piermont.

24tf H. C. SEYMOUR, Sup't.

LITTLE MIAMI RAILROAD COMPANY. Fall and Winter Arrangement, 1847. On and after Monday, September 20th, until further notice, a Passenger train will run as follows:

Leave Cincinnati daily at 9 A. M., for Milford, Foster's Crossing, Deerfield, Morrow, Fort Ancient, Freeport, Waynesville, Spring Valley, Xenia, Yellow Springs, and Springfield. Returning, will leave Springfield at 4½ a.m. Upward train arrives at Springfield at 2½ p.m. Downward train arrives at Cincinnati at 10½ a.m.

Freight trains will run each way daily.

Messrs. Neil, Moore & Co. are running the following stage lines in connection with the road:

A daily line from Xenia to Columbus and Wheeling, carrying the great Eastern mail.

Daily lines from Springfield to Columbus, Zanesville and Wheeling. Also to Urbana and Bellefontaine.

A line of Hacks runs daily in connection with the train between Deerfield and Lebanon.

Passengers leaving for New York and Boston, arrive at Sandusky city via Urbana, Bellefontaine & the Mad River and Lake Erie railroad, in 27 hours, including several hours' sleep at Bellefontaine. To the same point via Columbus, Delaware, Mansfield and the Mansfield and Sandusky city railroad, in 33 hours. Distance from Cincinnati to Springfield by railroad ..... 84 miles.
From Springfield to Bellefontaine by stage, over a good Summer road ..... 32 "
From Bellefontaine to Sandusky city by railroad ..... 102 "

FARE—From Cincinnati to Lebanon	$1 00
" " " Xenia	1 50
" " " Springfield	2 00
" " " Columbus	4 00
" " " Sandusky city	7 00

The Passenger trains runs in connection with Strader & Gorman's line of Mail Packets to Louisville.

Tickets can be procured at the Broadway Hotel, Dennison House, or at the Depot of the Company on East Front street.

Further information and through tickets for the Stage lines, may be procured at P. Campbell, Agent on Front street, near Broadway.

The company will not be responsible for baggage beyond 50 dollars in value, unless the same is returned to the conductor or agent, and freight paid at of a passage for every $500 in value over that amount.

47tf W. H. CLEMENT, *Sup't.*

FRENCH AND BAIRD'S PATENT SPARK ARRESTER.

TO THOSE INTERESTED IN Railroads, Railroad Directors and Managers are respectfully invited to examine an improved Spark-Arrester recently patented by the undersigned.

Our improved Spark Arresters have been extensively used during the last year on both passenger & freight engines, and have been brought to such a state of perfection that no annoyance from sparks or dust from the chimney of engines on which they are used is experienced.

These Arresters are constructed on an entirely different principle from any heretofore offered to the public. The form is such that a rotary motion is imparted to the heated air smoke and sparks passing through the chimney, and by the centrifugal force thus acquired by the sparks and dust they are separated from the smoke and steam, and thrown into an outer chamber of the chimney through openings near its top, from whence they fall by their own gravity to the bottom of this chamber; the smoke and steam passing off at the top of the chimney, through a capacious and unobstructed passage, thus arresting the sparks without impairing the power of the engine by diminishing the draught or activity of the fire in the furnace.

These chimneys and arresters are simple, durable and neat in appearance. They are now in use on the following roads, to the managers and other officers of which we are at liberty to refer those who may desire to purchase or obtain further information in regard to their merits

R. L. Stevens, President Camden and Amboy Railroad Company; Richard Peters, Superintendant Georgia Railroad, Augusta, Ga.; G. A. Nicolls, Superintendant Philadelphia, Reading and Pottsville Railroad, Reading, Pa.; W. E. Morris, President Philadelphia, Germantown and Norristown Railroad Company, Philadelphia; E. B. Dudley, President W. and R. Railroad Company, Wilmington, N. C.; Col. James Gadsden, President S. C. and C. Railroad Company, Charleston, S. C.; W. C. Walker, Agent Vicksburgh and Jackson Railroad, Vicksburgh, Miss.; R. S. Van Rensselaer, Engineer and Sup't Hartford and New Haven Railroad; W. R. M'Kee, Sup't Lexington and Ohio Railroad, Lexington, Ky.; T. L. Smith, Sup't New Jersey Railroad Trans. Co.; J. Elliott, Sup't Motive Power Philadelphia and Wilmington Railroad, Wilmington, Del.; J. O. Sterns, Sup't Elizabethtown and Somerville Railroad; R. R. Cuyler, President Central Railroad Company, Savannah, Ga.; J. D. Gray, Sup't Macon Railroad, Macon, Ga.; J. H. Cleveland, Sup't Southern Railroad, Monroe, Mich.; M. F. Chittenden, Sup't M. P. Central Railroad, Detroit, Mich.; G. B. Fisk, President Long Island Railroad, Brooklyn.

Orders for these Chimneys and Arresters, addressed to the subscribers, care Messrs. Baldwin & Whitney, of this city, will be promptly executed.

FRENCH & BAIRD.

N. B.—The subscribers will dispose of single rights, or rights for one or more States, on reasonable terms.

Philadelphia, Pa., April 6, 1844.

*** The letters in the figures refer to the article given in the *Journal* of June, 1844. ja45

DAVENPORT & BRIDGES'

CAR WORKS, CAMBRIDGEPORT, MASS.

Manufacture to Order, Passenger and Freight Cars of every description, and of the most improved pattern; also furnish Snow Ploughs and Chilled Wheels of any pattern and size. Forged Axles, Springs, Boxes and Bolts for Cars at the lowest prices.

All orders punctually executed and forwarded to any part of the country.

Our Works are within fifteen minutes ride from State street, Boston—Omnibuses pass every fifteen minutes. 10*f*

THE SUBSCRIBER IS PREPARED TO execute at the Trenton Iron Works, orders for Railroad Iron of any required pattern, and warranted equal in every respect in point of quality to the best American or imported Rails. Also on hand and made to order, Bar Iron, Braziers' and Wire Rods, etc., etc.

PETER COOPER,
1y10 17 Burling Slip, New York

RAILROAD IRON, PIG IRON, ETC.

600 Tons of T Rail 60 lbs. per yard.
25 Tons of 2½ by ½ Flat Bars.
25 Tons of 2½ by 9-16 Flat Bars.
100 Tons No. 1 Gartshrorie.
100 Tons Welsh Forge Pigs.

For Sale by A. & G. RALSTON & CO.
No. 4 So. Front St., *Philadelphia*

DEAN, PACKARD & MILLS,

MANUFACTURERS OF ALL KINDS OF

RAILROAD CARS,

SUCH AS

PASSENGER, FREIGHT AND CRANK CARS,

— ALSO —

SNOW PLOUGHS AND ENGINE TENDERS OF VARIOUS KINDS.

CAR WHEELS and AXLES fitted and furnished at short notice; also, STEEL SPRINGS of various kinds; and

SHAFTING FOR FACTORIES.

☞ *The above may be had at order at our Car Factory,*

REUEL DEAN,
ELIJAH PACKARD,
ISAAC MILLS,
} SPRINGFIELD, MASS.

1y48

LAP-WELDED WROUGHT IRON TUBES for Tubular Boilers, from 1¼ to 15 inches diameter, and any length not exceeding 17 feet—manufactured by the Caledonian Tube Company, Glasgow, and for sale by

IRVING VAN WART,
12 Platt street, New York.
JOB CUTLER, Patentee.

These Tubes are extensively used by the British Government, and by the principal Engineers and Steam Marine and Railway Companies in the Kingdom. 28tf

ENGINEERS' AND SURVEYERS'

INSTRUMENTS MADE BY

EDMUND DRAPER,

Surviving partner of

STANCLIFFE & DRAPER.

No 23 Pear street, below Walnut,
1y10 near Third, Philadelphia.

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This is the only periodical having a general circulation throughout the Union, in which all matters connected with public works can be brought to the notice of all persons in any way interested in these undertakings. Hence it offers peculiar advantages for advertising times of departure, rates of fare and freight, improvements in machinery, materials, as iron, timber, stone, cement, etc. It is also the best medium for advertising contracts, and placing the merits of new undertakings fairly before the public.

TERMS.—Five Dollars a year, *in advance.*

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One page per annum	$125 00
One column "	50 00
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One column "	8 00
One square "	2 50
One page, single insertion	8 00
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One square " "	1 00
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☞ LETTERS and COMMUNICATIONS for this Journal may be directed to the *Editor*,

D. K. MINOR.